SUPPLEMENT.

e Itliming Immal,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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LONDON, SATURDAY, NOVEMBER 15, 1873.

Original Correspondence.

FOREIGN MINING AND METALLURGY.

FOREIGN MINING AND METALLURGY.

ch Society of Commerce has fixed its next periodical sale hinst. It will comprise 30,000 ingots of Banca, offered ary conditions. The visible supply of Banca tin in Holland elose of October, 1872. The visible Billiton tin in Holland at the close of October, 1872. The visible Billiton tin in Holland at the close of October, 1872. Tries of Banca tin in Holland at the close of October were gots, as compared with 89,767 ingots at the close of October were gots, as compared with 89,767 ingots at the close of October, 1872. The current price of Banca in Holland at the close of October, 1872 at the close of October, 1872 at the color of 1872 at the e, there is not much alarm in the French iron trade; it is undoubtedly at present, but confident hopes are enterarevival in affairs. The Liverdun Forges Company will 15, a dividend for the first half of 1873 at the rate of 12s. The Fives-Lille Company has announced a dividend for the rate of 3l. 8s. per share; of this dividend 1l. 4s. per paid in coin Nov. 3, and 14s. per share will be distributed by 1. The balance of 1l. 10s. per share will be paid in obtoit the company, bearing interest from Jan. 1, 1874. The Mines Company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will be paid to the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will pay to-day (Saturday) a dividend of the company will be paid to the company will pay to-day (Saturday) a dividend of the company will be paid to t

a notable slackening in the French coal trade; ing formed at the pits' mouths, and in the warehouses. Coal owners also display a desire to sell, and are ants. Coal owners also display a desire to sell, and are with that object, serious concessions in regard to prices, by that the coal trade had hoped for and expected. Some is felt at this sudden check in affairs at a usually favourable in all the more alarm is felt since it is thought that the pretion rests on a weak foundation. In the basin of the Nord, isially at Lille, coal is stated to have been offered by one mine per ton below the official quotation. Paris, which usually alerably well the state of affairs, exhibits now a rather seriession in coal—at least, among speculators. Stocks are be accumulating, and deliveries are small, as well by raily water. It is not surprising, perhaps, that the market, a been undecided for two months past, should still maintain sion; producers will, probably, make a final effort when seconded by the rigours of the season, but a reduction in sevitable. In the basin of the Loire the demand is active, as are hardening, while stocks are almost nil. This condibings is, however, restricted to the comparatively narrow the Loire basin. The hope is gaining ground, taking France, that the price of coal is returning to a normal level in try.

less not appear to be any serious change in the aspect of an iron trade, and it difficult to see how metallurgical inn revive with a continuance of the causes which have to its present condition. It is not sufficient that the ice of coke leaves a little more latitude to the pig-iron. It is necessary that the conversion of pig into iron should give its present and that iron should be returned to at is necessary that the conversion of pig into iron should be dwith some profit, and that iron should be restored to mer ordinary applications by selling again at more modes. It is necessary also, that a fall in iron should coincide ll in coal, as there are few industries consuming one mate-h do not consume the other. Refining pig meets a slow to 44. 8s, per ton: casting pig remains rather neglected, to 64. per ton. Merchants' iron maintains its price, but comparatively little business passing in it. Rails have been ct of some transactions, and the special rolling-mills do not nt work. The plate-mills have also some orders, but they suffice to employ this branch of the national industry if works were not reduced to a state of idleness. The im-fpig and iron into Belgium have increased to the extent sent during the first eight months of this year, having 100,000 tons to 125,000 tons. The whole of the increase in this year's figures occurred in the imports from Eng imports of August presented a diminution, as compared of 1872. The expansion observable in the imports from

Great Britain occurred in rough pig and rails. On the other hand, the exports of iron from Belgium declined from 192,000 tons in the first eight months of 1872 to 162,000 tons in the first eight months of 1873; the decline in the exports occurred especially to England and the Low Countries. In August Belgium only exported 16,000 tons of iron of various descriptions, against 25,000 in August, 1872. Coal quotations have not varied in Belgium, but the demand has become less active; such may be said to the budget of the week. Stocks are beginning to accumulate, deliveries are less numerous, and railway rolling stock no longer makes default. The temporary dulness in the trade is attributed to the uncertainty in political events in France and the continuance of comparatively fine weather. Supplies were also laid in with some activity during the summer and autumn, and this circumstance has of course had a tendency to increase the existing dulness. At Charleroi the coal trade is beginning to complain of a scarcity of orders, prices remain, however, apparently firm. At Mons industrial coal has been feeble; only coal for domestic purposes is purchased with any firmness; prices have remained without any variation. At Lifege there has been the same state of affairs and the same tendency in business. Everywhere the coal trade presents, however, some heaviness. The imports of coal into Belgium amounted in the first eight months of this year to 404,000 tons, as compared with 126,000 tons in the corresponding period of 1872. August figured in these two totals for 57,000 tons and 15,000 tons respectively. The increase in the imports has referred wholly to coal obtained from the Zollverein, 224,000 tons more Ruhr coal having been imported into Belgium in the first eight months of this year than in the corresponding period of 1872. The imports of English coal into Belgium increased to the extent of 33,000 tons in the first eight months of 1873. The exports of Belgian coal to the Low Countries alone presented a falling off of 135,

ROCK-BORING MACHINES.

Sin,—I have noticed a good deal of correspondence carried on ately in the Journal about the numerous Rock-Borers now in use, have been one of the first users of the "Burleigh," and having kept astrict account of the cost of working the drill, and speed attained with it, as compared with hand labour, the results may interest some of your readers. I do not intend to enter into any controversy with rour correspondents, or to criticise their remarks, but briefly to state each as a to the working of the drill at the Camprian Quarries of of your readers.

of your readers. Ido not intend to enter into any controversy with your correspondents, or to criticise their remarks, but briefly to state facts as to the working of the drill at the Cambrian Quarries, of which I have the management.

The Burleigh Rock Drill, jumper size, has been working daily at these quarries since March, 1872. The machine is fixed and worked on the ordinary telescopic-legged stand, and the boring is done in open face of the galleries and top rock. The drill points are shaped like the letter X. The motive-power is obtained from the boiler of a steam-engine situated on the brink of the quarry, which is used for raising the rock from the lower galleries. The steam is conveyed in iron pipes 1½ inch in diameter, and are laid out into each gallery with a branch and tap leading to the face of the rock here and there. The machine has given every satisfaction, and with the exception of new piston rings, and some trifling repairs by the black-smith at the works, no breakage of any kind has taken place, and the machine now appears little the worse for the work it has done. From calculations made in May last a comparison shows that the work of untopping the slate rock has been done in about two-thirds of the time required by manual labour. The depth of the holes bored was about 8 ft., and the cost was found to be 5\frac{3}{4}d. per foot, the same being about 24 per cent. under the cost of manual labour. Another important point is the increased rate of progress. Llanberis, Nov. 12.

ROCK-BORING MACHINERY.

SIR,—In all the rock-drills which I have yet seen the great obstacle to their satisfactory working is the valve by which the feed and exhaust is regulated, and even in the latest drill noticed this is not entirely overcome. In this respect the Dubois-François drill is probably the best, but it is nevertheless rather complicated, and has the disadvantage of a great number of parts. I saw it working excellently in Belgium, but I have always noticed that delicate and complicated machines fare much better in the hands of Frenchmen of the working class than with the same class in England and I complicated machines lare much better in the hands of Frenchmen of the working class than with the same class in England, and I, therefore, think that for use in this country the Dubois-François drill might be simplified without interfering with its efficiency. Yet in its present form the drill is undoubtedly a good one, and several of the objections which have been urged against it are really quite imaginary. For instance, it has been said that because in some other drills difficulty is experienced in keeping the piston properly packed, therefore the fact of the Dubois-François having several pistons must cause extra difficulties; but this is not so, beseveral pistons must cause extra difficulties; but this is not so, because, because the absolutely accurate packing of the pistons which work the slide-valve is not necessary, even if the loose packing does not prevent wear and tear. But even if accurate packing were necessary, the inconvenience of attention to the pistons would be more than compensated by the advantage of the absence of shock at each end of the stroke. Upon the whole, I think I think I should be inclined to adopt the Dubois-François machine even in its present form, and I believe that in a very short time.

But that which I think there is more need for than any of these steam or power drills is a really good hand-drill—an instrument that

steam or power drills is a really good hand-drill—an instrument that can be supplied for 40l. or 50l., and capable of being worked by one man, and of performing (say) twice or thrice the work that can be done with the ordinary jumper and sledge. The machine of Abegg

and Richards was about the best I have seen, but it lacked the means of fixing so as too keep it properly up to its work—a want that could be very easily supplied. Next to this was the Villepique perforator, which had an ingenious arrangement for making the machine suit itself to rocks of different degrees of hardness. A combination of these two machines would probably come somewhere near perfection, and such a combination would, I think, be quite patentable. It is, perhaps, a disadvantage that all hand-machines must be on the pressure principle the adoution of the pressure system process. abrasive principle, the adoption of the percussive system necessarily involvina the use of steam or compressed air, but for the drilling of coal, killas, and similar soft rocks, the machines I have mentioned appear to work tolerably well, and to be capable of improvements which will make them of real practical value.

S.

PRACTICAL MINING-SUGGESTIONS TO AGENTS.

PRACTICAL MINING—SUGGESTIONS TO AGENTS.

SIR,—I have carefully read over most of Mr. Ennor's effusions in the Journal from time to time, but can draw from them little or no information. He appears to be always writing in the same groove as ourselves—that is, seeking information, but at the same time putting himself forward as not only the miner's Mentor but the authority to teach our Government-paid chemists and geologists—aye, that is the grand ultimatum, Government appointments! But Mr. Ennor is too late in the day. I sometimes contrast the papers, lectures, and essays contributed to the Journal and other mining literature by those men Mr. Ennor desires to teach—Smyth, Taylor, Collins, Foster, and numerous other worthy and able men, as their works testify, published in the "Transactions" of the Cornwall Geological Society, Royal Cornwall Polytechnic Society, Royal School of Mines, and, not least, the Cornwall and Devon Miners' Association. Why is it Mr. Ennor has never favoured the latter association with a paper, that it may be ventilated by men whom he seeks to tion. Why is it Mr. Ennor has never favoured the latter association with a paper, that it may be ventilated by men whom he seeks to improve? then some good might accrue from his advice and novel ideas. Why does Mr. Ennor concentrate all this abuse on the metalliferous miner, and notably the Cornish miner? Why not explain to the Northern miners and colliers their short-comings—surely they require a little teaching also? I have noticed the most prominent subjects now before the metalliferous miner have not been dealt with by Mr. Ennor—how to provide a cheaper means of unwatering our mines; the high price of coal, and its remedy; the introduction and maintenance of machine-boring; the general use of dynamite; cheaper transit for the ores from the forehead to the surface; the full power to be got from the Trevithick or Cornish boiler, and consequent economy of fuel, and safety, without the introduction of feed-water heaters; the use of hydraulic machinery, and the storage of water; the general use of stone-breakers, and pneumatic steam of water; the general use of stone-breakers, and pneumatic steam stamping, or Californian revolving stamping apparatus; a better method of letting contracts to men, whereby they shall not be remethod of letting contracts to men, whereby they shall not be restricted in the amount they may earn, but the one great end always kept in view—speed in the development of the mine. Why not publish his book, instead of promising to supply us with a panacea for every evil mining is now labouring under? Then we may hope to get a solution to this tangled mass of interrogations which is put before the readers of the Journal every week. I am of opinion most of Mr. Ennor's questions are such "as no fellow can find out, and we are very anxious that the solutions to the problems may be in the printer's hands before our Mentor drops off, which surely cannot be an event very far distant, when we take the natural span of an ordinary man's existence.

I would suggest, seeing no one can even offer an opinion on the

of an ordinary man's existence.

I would suggest, seeing no one can even offer an opinion on the many questions Mr. Ennor puts, that he will write (say) six letters, like the famous Mr. Paffard, of Emma renown, and, finding no one can reply, answer the whole himself in another six letters. Perhaps the answers to the interrogations might invoke more discussion than the questions themselves, and this lot of articles now appearing would be far more useful than those preceding them on mining machinery. I turn back, and see the long letters on the new old idea of stamps, and large talk of commencement in the spring, when we have plenty of daylight, &c., and laying out extensive floors, and patent machinery; but, after many enquiries, I am compelled to believe that this promise, like the rest, is not destined to be fulfilled.

Perhaps it may not be out of place to ask a few questions of con-

Perhaps it may not be out of place to ask a few questions of our mining men in the cause of real progress, but of a different nature—that is, the questions that may be selved. If some of the members of the Miners' Association would kindly answer them in your valuable Journal they would be doing mining a good service. I will jot down a few at random that ofter occupy my thoughts. Is there a machine safer, stronger, or rather more durable, than the present Cornish pumping-engine for unwatering our deep mines? Is there a safer, more economical, or durable steam-generator better adapted for use in the metalliferous mines than the Trevethick Cornish boiler? Admitted the coal is not so good as it formerly was, what remedy should be adopted? Is the present winding-engine the best that can be used, or have the French and American engineers advanced on this type of engine? Is not the stone-breaker used in most foreign mines, and in all mines of any note in America? And are not the Americans far in advance of us in crushing, stamp-Perhaps it may not be out of place to ask a few questions of our used in most foreign mines, and in all mines of any note in America's And are not the Americans far in advance of us in crushing, stamping, and milling ores? If so, is it prejudice or ignorance that overrules the introduction into Cornwall of all those tried labour-saving appliances now in use among modern miners? Has the old drudge Cornish stamps been improved for the last century? Has not more economical and speedier machines been brought into successful operation, but looked upon with distrust by Cornish miners, and still continuing to turn out ten times more work in 24 hours than the old Are there many natural eligible sites in Cornwall partistatings? Are there many natural engine sites in Cornwain particularly suitable for carrying out schemes for water supply, as propounded by your Prize Essayist, Capt. R. Goldsworthy, of East Pool Mine, in the Journal of Oct. 18? Could not the windmill be made available for stamping purposes? Cornwall being a neck of land, the wind sweeps over it on every side. Which is the safest and strongest explosive agent to be used in the deep mines in Cornwall? Mining being expired on profitably on the Continent despet than in Cornwall. being carried on profitably on the Continent, deeper than in Cornwall, have they a safer means or more expeditious method of raising and lowering the miners? Rock-boring being successful in many mines, why not available in Cornwall? Could the air compressor be fixed in the level, and worked by horse, manual, or hydraulic power?
Many more questions might be put, but if the solutions are not forthcoming no good will come of such efforts, and should be omitted from

your valuable columns. If our mine agents, engineers, and students do not come forward and supply the information asked for, and dedo not come forward and fend themselves against the ungentlemanly attacks made on their ability by Mr. Ennor, then I take it his letters, so full of calumny and base insinuations, are beneath the notice of the most intelligent and respectable class of men in the county of————CORNWALL.

PRACTICAL MINING-SUGGESTIONS TO MINE AGENTS.

SIR,—I observe "A Miner" has fallen into the same error as his opponent, Mr. Ennor—pretending to solve the vexed questions of the day, but in reality offering no suggestions whereby the mining engineer may reduce his costs, and thereby save himself from impending ruin. In summing up the remedies to be employed to make deep mines pay, he says we must substitute better boilers and better engines than now in use, but does not tell us what class of boiler or engine to employ, or give a description of them; it is one thing to tell us to employ better machines, and another to design something better; at any mate, "A Miner" should have detailed what engines are better, where we might see them in operation; should have forwarded you diagrams, data of duty, and full information for our guidance, that the accuracy of such assertions may be proved beyond a doubt. Every new thing is not an improvement, nor are all the guidance, that the accuracy of such assertions may be proved beyond a doubt. Every new thing is not an improvement, nor are all the many patent engines, fuel economisers, feed water heaters, &c., in the market really economical, or the right thing to be introduced into our large mines; "grand merit" for progress is very well in some cases, but what different kind of engine "A Miner" would erect for drawing the water from Dolcoath I am at a loss to discover, and shall feel obliged for any information on that point. My experience is so much like your Prize Essayist, Capt. R. Goldsworthy, that I will only refer "A Miner" to page 605 of the present volume of the Mining Journal, and ask him to supply a set off to the engines spoken of there. My opinion is that the best means to be adopted for the reduction of our coal bills is to utilise the waste water ever flowing to the sea. For instance, see the Government schemes for water supply to the gold fields of Victoria; how would they have been able to open up the mines in that country if they did not dam up and catch every drop of rain, and store it in their extensive reservoirs? Then we have only to look at the great works of this nature in Italy, Spain, France, the great bunds in India, and the extensive lakes and reservoirs in Bombay, with more such examples which might be brought forward to show there is no place so favourably situated as Cornwall for carrying out great catchwater reservoirs. Would not a company formed to carry out such schemes reap a profit? I think with your Essayist, as above, in page 629 of the Journal, something as described there would be a step in the right direction. Will your correspondent kindly give your readers the description of engine he recommends; and tell us which explosive agent is the most useful in metalliferous mines, as the fight is still between Dynamite and Lithofracteur? Guncotton, which explosive agent is the most useful in metalliferous mines, a the fight is still between Dynamite and Lithofracteur? Guncotton I think, is not yet sufficiently known to come into general use; but why the Cornishmen are so backward in the use of dynamite I cannot understand. The Cornish miner abroad is the first to try new methods, and is the pioneer in most movements for the advance of mining; why he continues to move on in the old style of things at home, especially in the stamping-machine, explosive agents rock-boring, is beyond the comprehension of a Students

PRACTICAL MINING-SUGGESTIONS TO AGENTS.

SIR,—I was very much amused on reading Mr. Ennor's remarks in last week's Journal on the formation of gossan, and also the contemptuous way in which he speaks of fossils. What a lamentable ignorance he shows of the merest rudiments of geology when he says that nothing but lead, iron, and zinc occurs—or, as he expresses it, "grows"—over fossil-bearing strata, and these only produced from the "seed" carried up from the lead-bearing layer below the lime formation. What ridically us propensed. It is well-known fact the rights of the rights. What ridiculous nonsense! It is a well-known fact the richest gold reefs occur in the Silurian system, and the Laurentian and Cambrian systems are the principal repositories of the ores of iron, tin.

copper, silver, &c. All these systems are fossiliferous.

Does Mr. N. Ennor think that he will get any agents—or, in fact, anybody—to understand such a theory as that "gossan is f rmed by polar and molecular motion of atoms propelled by electricity through lodes and layers?"

A PRACTICAL MINER AND GEOLOGIST.

PRACTICAL MINING, AND MR. N. ENNOR'S SUGGESTIONS TO MINE AGENTS.

SIR,-The signs of the times are evidently portentious, and seem to indicate that practical mining is in a transition state, or else calling loudly for such a change. The adage that "When things come to the worst they must mend" will be found as true of it as of any other enterprise, and that on emerging from the present de-pressed condition into which it has been brought it is highly probable it will be more susceptible of improvement, as the ordeal through which it is now passing will tend in some measure to awaken more particular attention to it. At first sight it may appear that more particular attention to it. At first sight it may appear that its present stagmant condition has been brought about by a fortuitto present stagman conduction has been drought about a far one concourse of events, but on further investigation I am con-inced it would be found to have resulted purely from causes which Vinced it would be found to have resulted purely from causes which have been operated by human agency.

I would not be understood to endorse all that Mr. Ennor has

written, as some of his views are altogether wide of my experience, and too intricate for my comprehension, but as these relate more particularly to theoretical mineralogy than to practical mining they are comparatively unimportant; at any rate, they are so to me. must, however, be admitted by every thoughtful and unprejudic are comparatively unimportant; at any rate, they are so to me. It must, however, be admitted by every thoughtful and unprejudiced miner that facts which vitally affect the interests of mining are fearlessly enunciated by him in the Mining Journal. It is true that his ideas might sometimes be conveyed in more congenial phraseology, but if it is the habit of an individual to be outspoken would be most unwise to treat with indifference information which if properly embraced and applied, would greatly improve the general practice of mining. Itought not to be difficult for experienced to distinguish between rational and truly practicable measures

and those which are merely the suggestions of an ingenious fancy.

It cannot be successfully disputed that too many mines are not at work, and that it is not to be attributed to the conduct of mine agents themselves to a very large extent. I have long been con vinced that one of the worst evils which afflict mining is the pre I have long be disposition of mine agents generally to write ambiguously, or draw upon their imaginations to colour reports of mines, which de serve the most unqualified condemnation. I ask in all earnestness, and would thank any of your readers to answer, whether mines ought to be prosecuted year after year, and tens of thousands, if not hundreds of thousands, of pounds spent annually upon the mere chance of finding something, and in the absence of any appreciable features or facts which can definitely be construed from rational considerations, to indicate proximity to, or even some remote re-

Mining is a science embracing, amongst other branches, the optical and logical realms of philosophy, and men, whether intellectually or physically blind, cannot be expected to prosecute it successfully. It is a scientific concatenation of arts practically adjusted, but which in too many instances, as at present conducted, is mystified by ignorance and obstructed by egregious conceits, whilst the cardinal principles upon which it reposes as an immoveable basis are either utterly unknown or flippantly rejected. There are many note-worthy exceptions to this view, and in the interest of mining it is well that it is so.

I appreciate the consideration which prompted a Devopport "Adwhich is a consideration which prompted a beyongor. And Mines' to deprecate Mr. Ennor's severity "upon the but, as one of them, I esteem the admonition with all venturer in Mines ts severity much more highly than I can possibly do anything sa-The proper position of agents 'wheel" of mining, and not at is on the "bridge" as well as at the "wheel or mining, and not at the wheel exclusively, subordinated to the swaying of a usurper pilot's hand, especially when such pilots have first to ascertain from the "wheel" man the general direction in which they are to steer. These things are just as absurd as to pretend that the ivy supports

There cannot be the least doubt but that scores of mines are to it. now in work, dragging their slow length along propped by fletitions representations, but which do not present the shadow of a reasonable prospect of their ever becoming productive. Than this there cannot be a more short-sighted policy, for nothing is more certain than that persistency in such a course must always stultify the moby which it was actuated.

ves by which it was actuated.
It is too often the case, as is implied in the expression of symthy by a Devonport "Adventurer in Mines," in the Supplement last week's Journal, that they are too often "directed," instead of "directing" others, what course to pursue. And if such an important body of men is degraded—no matter by what motives or instrumentalities—into mere machines, and used for special purposes in the hands of designing operators to promote their particular interests, it is my opinion that they have none but themselves to thank for it, for if they made it a point to defend their principles those attempting to induce them to violate them would certainly desixt from doing so—Hampert Ver 11.

ROBBET KAARD desist from doing so .- Llanrwst, Nov. 11, ROBERT KNAPP.

LEGITIMATE MINING-WHEAL MARY HUTCHINGS.

SIR,—It affords me much satisfaction to observe that this mine, to which I called attention in the Journal of April 5, is now attracting the attention of the mining public. Since that time it has gradually continued fo improve, and from the latest reports has now increased the monthly sales of tin ores sufficiently to meet the working costs, and as it is further developed will, without doubt, soon enter the Dividend List enter the Dividend List.

enter the Dividend List.

The principal shareholders, taking into consideration the important position that this mine will shortly assume, have decided to alter the constitution of the company from the Cost-book System to the Limited Liability, and as soon as the necessary forms are gone through the new company will be duly registered, thereby giving greater confidence to the outside public who may be desirous to invest in this valuable property. For it must not be lost sight of that the whole of the machinery for pumping, drawing, and stamping is worked by water-power, which is ample at all seasons of the year. Although labour and materials are at a high price, and the tin market is at present depressed, still this mine is able to be developed at a very small monthly loss, which, on a reaction taking place in the price of this metal, will turn into a profit, and there is every pro-

it a very small monthly loss, which, on a reaction taking place in the price of this metal, will turn into a profit, and there is every pro-

Those who invest at the present low price of shares will have a fair prospect of making large profits before another year has passed. The public, as a rule, generally invest when the price of shares is high, instead of purchasing into legitimate mines when they are at a low figure, and depressed below their intrinsic value.

Morning News Chambers, Phymouth, Nov. 12. EDWARD BETTELEY.

A CORNISH MINE MEETING.

SIR,-As but few of your readers have ever attended a Cornish mine meeting, I venture to give them a faint idea as to how the business is conducted, and outside shareholders' interests cared for at some of the mines in the neighbourhood of Camborne and Redruth, and I have no doubt elsewhere. I do not mean to infer that my remarks apply to all, as there may, doubtless, be some exceptions. I select (say) one as an example of a few, perhaps of many. It should be understood that in Cornwall the purser of a mine is all omnipotent: he has the entire charge of the books, and invariably elects himself as chairman at all meetings. It is he who rules supreme, and woe be to him who comes between the wind and his

a general rule, meetings are called for 11 or 12 o'clock, and a As a general rule, meetings are called for 11 or 12 o'clock, and a visiting shareholder, unacquainted with the customs of his coadventurers, and deeming that punctuality is the order of the day, naturally arrives at the time given in the notice convening the meeting, but finds to his chagrin on his arrival that, like Patience, only on a mine, smiling at grief. Presently, in the distance will be observed, slowly drawling along from all points of the compass, some few of the gentry who will shortly honour him with their company. It should be here mentioned that the regular attendants at these meetings are a few crimging shouldeness. etings are a few cringing shopkeepers, with perhaps a single are, and a few of the suppliers and would-be creditors of the mine, their representatives. In a few minutes will be seen a smart trap, snare, and a few of the suppliers and or their representatives. In a few minutes will be seen a smart trap, or hooded wagonette, slowly ascending the hill. By this time, perhaps, 20 or 30 adventurers may have arrived, and in half-an-hour or so after the appointed time rattles up in his carriage and pair in dashing style—the hero of the hour and great man of the day. A general stumpede is made to the office, or account-house as it is called, where the meeting is to be held. All eyes are on the great man as he marches into the room with his cost-book under his arm, and some few of the small fry venture in—faint hand-clap—only to be silenced by "Now, Gentlemen, to business." The great man gra-clously takes his seat, and without more ado at once turns to the ccounts, and commences to read after the following style: -"The acaccounts, and commences to read after the following style:—"The accounts, Gentlemen, show the cost-sheet for so and so amounts to so much, ditto, ditto; merchants' bills, so and so. On the other side, we have sold tin ores, less royalty, so much, leaving a profit" whether or no. No dates are given as to the period to which the accounts are charged—no dates of sales of tin. He continues—"Our liabilities are—Merchants, thousands; bankers (perhaps), ditto; royalty, hundreds. Our assets are—Ora unseen, many thousands, leaving a bandsome. Our assets are—Ores unseen, many thousands, leaving a handsome balance in your favour of four figures. Now, gentlemen, those are our accounts. I propose that they be passed and allowed.' the words are hardly out of his mouth all hands are up; not a voucher is asked for, cost examined, or a question asked—all taken for granted, whilst the probability is that several months' costs remain incharged. Ores sold the day before the meeting, credited in the coounts, and may be a portion of the ores credited as sold, have ot even seen daylight. Almost before hands are lowered, and in he pockets of the respective owners, a snug little or big dividend is eclared—of course amidst applause. Capt. Somebody is requested to ead the report, which he does in a most artistic manner, whilst the reat man close his even and appears to have reposed into a sweet incharged. great man closes his eyes, and appears to have reposed into a sweet umber. The report read, and a few consolatory remarks from the gent, and all is over. Time, perhaps 15 minutes. The Chairman retires to commune over his good luck, the small

The chairman retires to commune over his good luck, the small ry to indulge in a whiff of the not very fragrant weed, merchants ponder over the chance of their obtaining a goodly order for sup-lies, quite regardless as to whether required or not. All this is ending the arrangements being made for the chief event of the ay. Dinner is soon announced, and the sight that greets the eye rould gladden the heart of a gourmand. Huge hunks of beef, roast and holled productus leave of mutton, a rignatic nice a four or so and boiled ponderous legs of mutton, a gigantic pie, a fowl or so and vegetables ad lib. The great man takes the head of the table and vegetables ad lib. The great man takes the head of the table, and the process of carving, which is a study, commences. The stabs of ox and sheep that are handed about by brisk but not over pretty maidens makes one wonder at the digestive propensities of the feeders, and the thought crosses one's mind that more than one must be freezeward with the treatment of the feeders. favoured with the stitutions than others indulge in a basin of hot broth in the kitchen preliminary to the more substantial cheer above.

Mountains of vegetables, consisting generally of potatoes, carrots,

turnips, parsnips, awedes, and cabbages, may be seen piled on the plates of the respective occupants, and an end view of the long table gives the appearance of carefully-arranged haycocks. Like all good things, dinner must come to an end, so comes the finish to this meal. Tables are now cleared, glasses placed in due order, and decanters glisten with the many-coloured devices of distillers and wine merchants. Matrimony (a composition of Plymouth gin and rum) is invariably the order of the day. Glasses charged, our great man rises, and freely dilates on the splendid property we have in our hands, and congratulates us on our happy position, especially refer-ing to the dividend declared to-day (doubtless to be paid out of ing to the dividend declared to-day (doubtless to be paid out of money borrowed of the bankers), and then roundly abuses the lords, the merchants, or the Stannaries Court (well-merited abuse I must admit), and, finally, sits down in all his pride to laugh in his sle at the innocence of too confiding shareholders.

the "wheel" man the general direction in which they are to steer.
These things are just as absurd as to pretend that the ivy supports the oak for the simple reason that it is sometimes found clinging having been passed over with all due honours, his majesty retires

(with his cost-book as before) escorted by some half-do lackeys (doubtless creditors) to his carriage and pair, to away to the tag end of another account, the management has probably a hope to secure at some future day. The afternoon is devoted to mine talk, which varies as the afternoon is devoted to mine talk, which varies as the c the decanters decrease. Presently, no doubt from the effi-cigar, Capt. Jack is seen to glide silently and sernely for to under the table; from some other cause, Mr. Wallsen buried deep in the bosom of his shirt, strange noises procehis nasal organs, and one or two others show sympt

his nasal organs, and one or two others show symptoms of ment in their speech.

The principal agent suggests tea, and a general breakparty ensues. Some find their way to the hotel of Reln
to do a little share business on their own account, and to
rest of their evening; others retire to the most convenien
for ascertaining what pay or account is to be held to-more
they can probably ranew their good fare of vesteral they can probably renew their good fare of yesterday Cornish world wags, and shareholders pay the bill.

THE ORIGINAL CORRESPONDENCE IN THE "MINING JOURNAL."

On reviewing the Original Correspondence in the Sir, On reviewing the Original Correspondence in the ment to last week's Journal, we find a variety of thought, of aims, and great variety of ability, but a great similar point—a great desire in each to favourably impress the Brit with his own views. We pass over the leading article, who give us some valuable information in an impartial new particle of the property of the propert attern which, if more closely followed by the original extern which, if more closely followed by the original could have rendered their correspondence of infinitely in First in order of these comes Mr. B. A. M. Froiseth, U

The burthen of this epistle seems to be a propping-up of twhich, so far as any chance of profit to the British capital cerned, has certainly been a failure. Whether Mr. Paffa Froiseth is correct in their respective views of this affair prove. If, however, the British public had taken more such men as W. Eddy, jun., whom Mr. F. has set down common miner," and had avoided the counsel of such g mining experts as America has sent forth to us, the we know, have been very much more in their favour. "A Miner," on the Mines of Lake Superior, appears to as giving impartial information. Mr. S. Davies seems as giving impartial information. Mr. S. Davies seems to a question of boring machines judiciously. We shall be gla some of his objections answered, if, indeed, they are not ut able. "A Civil Engineer" refers to an important subjection of Mr. Walker's plan in order to form an opinion on the "Agent" dating his letters from St. Just professes to give Conversations. Now, this may be a very clever way to p notions before the public, because some readers may be led belief that they are really what they profess to be. But wheard working miners using such words as "antipodes" and

heard working miners using such words as "antipodes"

ciliousness" in ordinary conversation?

Mr. N. Ennor comes forward with his suggestions to agents, the assurance of this man is really beyond the sublime. can one read such a fanfaronade of nonsense? paragraph in his letter is the last, which contains so many We certainly think that if he can get all his questions an may then form a book which may be of some value. (Devonshire) puts some pertinent questions to Mr. Enno the sake of his reputation as an instructor of miners, he deavour to reply to. "A Miner" (Ontonagon) seems to a mine captain should have nothing else to occupy his talk to men coming to ask for employment, and that per fathom of ground should never change, let it be We have seen men of his class elevated to the position

not proving, after all, the most agreeable of men to work under "An Adventurer in Mines" seems to be an admirer of Mr. En who we suppose will, while he gets such scant encouragement tinue to favour the world with his lucubrations.

Mr. C. A. Moreing gives us an account of Trelech Mine, mat la rnach, in Wales. We look to see the author promoting them yrnach, in Wales. We look to see the author promoting of this mine, which, according to his description, certain ing of this mine, which, according to his description, certainly me a trial. We have no doubt there are many more productive mit to be found in Wales. Will Mr. Moreing say what proportion of proceeds have to be paid the "lord's" as dues? Mr. Robert in displays, as usual, some ability, and has somewhat improveding plicity of language. We think that with further improvement this particular his letters will become of considerable value for readers of the Mining Journal. Mr. Tredinnick, as usual, sels abuse all mines with which he is not in some way connected. Reeves refers to the public samples at Tayistock of copper ore the Great Belstone copper lode, as proving that 6 ozs. of sile contained in the ton of stuff broken from the lode. Now, as the samples prove only that the copper ore produce that quantity contained in the ton of stuff broken from the lode. Now samples prove only that the copper ore produce that quesilver, we query what proportion of the lode lode is the as copper ore? Mr. Alfred Harper, in his letter on the Fr Mine, seems very cleverly to advocate the cause he has in.

The letters on East Van and the Central Van being control of the lotters of the lotters.

The letters on East Van and the Central van being contral and simply brokers' differences of opinion, we pass over a public interest. The same may be said in regard to the R Consolidated, and Wheal Vincent Tin Mine. "Justice," this writer complains of should certainly be put an end to; does he not name the concern? We certainly think that course is, at present, the most direct and legitimate way of with such abuses, and the most likely to put an end to "A Traveller" advocates Mining in Breage. This certainly "A Traveller advocates Mining in Breage. This certainly has a good mining district, but all the mines worked have not alike profitable. Wheal Fanny may be as he describes, but it Traveller and the worked, an advocacy by anonymous will not respect the intervent much." will not promote its interest much.

READERS OF THE "MINING JOURNAL"

MINERS' CONVERSATIONS-No. IV.

Did you ever see Mr. N. Ennor in his travels? Bill.—Yes, several times. He is living on his "means," people and spends his time in visiting all the mining districts for please, and sometimes for profit by reporting on any mine when requested

What do you think of him? I never spoke to him in my life, but I have heard set They say that of all men Whatever he knows, it gents speak of him without much respect. hey ever knew he is the most conceited. they ever knew he is the most conceited is clear he does not know himself, for if the agents) expose his egotism as he does in the Mining have read all his letters inserted therein for several years, have read all his letters inserted therein for several years are given a spirit of pride arising from a presumed knowledge of "Meture's Laws," and of everything else. The letters, I beliers, are written for nothing but display. He is courting the praise of the mining people for the assumed possession of superior intelligence in relation to geology, mineralogy, &c.; but many of the against the second of the second

laugh, and call his presumed superior knowledge in question.

John.—I believe that conceit is inherent in every man, but in Ennor it is developed in a high degree. I confess that the infimity attaches to myself, but I do not let the world know it like he does. man, but in and I try to subdue it. It is amusing to read the question pounded by him to the agents of mines—questions which I be and I try to e cannot even answer himself. It is an easy thing to ask quest which nobody can answer. That mode may be one way of showing tific knowledge

Bill.—His recent letters have depreciated the agents of mines st unwarrantably, many of whom are very trustworthy men.

Toka.—He admits that Capt. R. Pryor has discovered a good mine New Great Consols, which is something for Ennor to do Bill.—Capt. R. Pryor is one of the best of agents, and

mu.—Capt. R. Pryor is one of the best of agents, and more ceasful in procuring good mines than any agent that I know. There is Wheal Kitty, in St. Agnes—a dividend mine—which would have been idle many years ago but for him. He kept it to work sometime on his own reshonsibility, when the credit of the company was gone —at least with some merchants. He had confidence that it would

MINIMG

and he soon cut the bunch of tin ore which continues up to the

Then, why did he leave the mine

of Then, why did he leave the mine?

"Then, why did he leave the mine?

"Capt. Teague, they say, squeezed him out.

"Capt. Teague under his management?

"Theroft, Wheal Kitty, Carn Brea, Wheal Seton, and Pen
"Theroft, Wheal Kitty, Carn Brea, Wheal Seton, and Pen
"Theroft, Wheal Kitty, Carn Brea, Wheal Seton, and Pen
"Theroft, Wheal Kitty, Carn Brea, Wheal Seton, and Pen
"The Man New Index of the same by getting into when he sees that he can do it without risk, when he sees that he can do it without risk, when he sees that he can do it without risk, when he sees that he can do it without risk, when he sees that he can do it without risk, when he sees that he can do it without risk, when he sees that he can do it without risk, when he sees that he can he see that he same of the most of the most honourable, which you will find in many, and will not rivy to what people call "a job."

I have always had the same opinion of him as yourself.

arty to what people call "a job." arty to what people call "a job." —I have always had the same opinion of him as yourself. —I have always had the same opinion of him as yourself. Rept fair to the men. He is not tyrannical, like many are. The process soon after they put on a captain's jacket show off as gents on after they put on a captain's jacket show off as they were a superior order of beings to the men under them; they were a superior order of beings to the men under them; pt. Pryor does nothing of the kind. His son, Capt. Joe, is one most clever, steady, unassuming young agents in Cornwall.—Some people entertain a notion that mining in Cornwall is come to an end; what do you think about it?

ye come to an end; what do you think about it? ye come to an end; what do you think about it? is.—I think that mining in Cornwall will continue till the end is.—I think that mining in Cornwall will continue till. Mining me; and when that will be no man on earth can tell. Mining planging pursuit, like other pursuits. Sometimes it prospers becality, and then in another. Gwennap, Breage, and Gwinear, ander a cloud now, so to speak; and Camborne and Illogan are so more supported by the prosperity, which I hope may long continue; but a suill accrue to Camborne. No mines last for ever. Dolcoath the other mines about it are deep and deepening; and the time the other exhaustion of resources will occasion abandonment. me when exhaustion of resources will occasion abandonment age when can describe the pened, as they will be in Gwennap, just new mines will be opened, as they will be in Gwennap, just new mines will be opened at population. I remember the Treskerby and North Downs stopped nearly 50 years ago but it has not come yet.—St. Just, Nov. 11.

AGENT.

THE SOUTH WALES STEAM COAL FIELD.

Will you favour me by inserting the following remarks on m.—Will you favour me by inserting the following remarks on present and future of Neath, improving the accommodation for ping large vessels, and also giving greater facilities to the introduced and in their maiden state? About three same rals, untouched and in their maiden state? About three sage you published my last report, pointing out the great nety of doing what I suggested, but up to this time it has not been mplished. Although many of our friends and burgesses did all eir power to obtain a Bill, still they were not successful. But we observe that great efforts are being made, and meetings have convened, to go to Parliament for the Bill; and, what makes it telling, the whole of the landowners except one have given their alconsent, and there is little doubt but the Earl of Jersey will tand in the background; indeed, it is fully believed he will come and and take example from the late Marquis of Bute. and, by and his shoulder to the wheel, success must then attend the prohis shoulder to the wheel, success must then attend the prors. Those gentlemen have not only given their consent, but noney also. The present re-election of the Mayor for Neath o doubt, be the means of pushing this matter forward; indeed, the has headed the list with 2001, towards meeting this great and much needed want; and having such influential men as k manager, and the Great Western Railway Company, there g manager, and the Great western harlway company, there ubt it will now be carried out. The gentlemen appointed e committee—including Mr. Howel Gwyn (of Dyffryn), Mr. Lonlas), Mr. Charles Price (of that good old firm of Quakers so many years were connected with the Neath Abbey Iron y), Mr. P. B. Bidder (Wainceirch), &c.—must and will have eight with a Committee of the House of Commons, and it but prove successful now that we have the right men in the

your readers many years ago that Neath was designed by a become a large town, having the whole of the mines and all along the side of the harbour, and pits and collieries sened out on each side of the river, and the coals can be and lifted up from the mines right into the vessels; these sely the same seams of coal as are now so extensively worked textbury and Absordare district, not withstanding, they are Merthyr and Aberdare district, notwithstanding they are saway. I believe I did in my last report explain that the saway. I believe I did in my last report explain that the labey ruins are within two chains of the centre of the South steam coal field, and at this point one of the finest rivers runs is, showing that fallible minds ought to work with the power sput all things so near this Neath. I confess that charity at home, and we ought to take advantage of working the which lay under our feet and for miles down towards the ch lay under our feet, and for miles down towards the

and 30 miles south.
t since my last report many excellent openings have lace. To begin at home, we have a good paying colliery, opened an old inhabitant, Mr. Evans, of Eaglesbush, and all Neath mevery success; also the Old Gnoll Collieries, which nearly yago were worked by Sir Herbert Mackworth, and re-opened y ago were worked by Sir Herbert Mackworth, and re-opened nited company, who have at last got the water out of a porthe workings, and sending small quantities of coal to market, et alone the Welsh Freehold Company; they are sending coals set; they have made a branch from the South Wales Mineral y to their works, and I hope soon to report better progress, se branch will be so settled as to find the engine working the instead of horses. This company, we are informed have make branch with be so settled as to find the engine working the mach instead of horses. This company, we are informed, have set Nant-y-bar, therefore enabling them to work the coals from a Wenalt Riders through their present levels. But to make this at every profitable would be to sink a pair of pits higher up, at half-a-mile above the present level's mouth, and so win the allow under water; but upon this we shall say more eventually. I ediyngwillin Colliery Company are pushing on very fast with it outside works, making a new incline plane down to the Abert-th siding of the Great Western Railway. Mr. Billings, the managdirector, seems very anxious to send coal into marketas quickly possible, and here I may remark, providing the company will sector, seems very anxious to send coal into market as quickly sible, and here I may remark, providing the company will on a good substantial level, and cross the Blaentwich fault, I they will come to the very same seams as Dron Vale and yewm are working, and once this fault is crossed I do not a colliery that can be worked more cheaply and more free my dislocations or faults; here they have a large acreage, and broper management this cannot but prove a great success, and large dividend to their characteristics. dividends to their shareholde

are also some gentlemen who have taken to the Clyne Level. ng on with it. No doubt en pushed on by the last company they, ere this, would be g out 100 tons a-day of coals at a profit of 5s, 9d, or 6s, per least. However, I hope the present party will, with enteris and perseverance, make this, as no doubt it will, pay hand-mely, and at present price clear 8s. 6d. per ton with good super-

and attention.

BLAENGWENFERWD.—This property is situated near the South Fales Mineral Railway, and about five miles from the Briton Ferry bocks, and about the same distance from the new proposed docks. The acreage is about 400 or 500, and lies between two faults. The cals have been provided to be full its usual Is about 400 or 500, and lies between two faults. The shave been proved upon the property, and to be full its usual class good coal. This property is well adapted for opening out ood substantial colliery. Driving down the slants to the deep cals can be brought to the surface by engine-power; saving enormous expense of hauling by horses, the seam dips about a. in the yard, and level headings can be driven both sides of the at. In my experience of 45 years I have not known a coadickness good coal. on, in the yard, and level headings can be driven both sides or the slant. In my experience of 45 years I have not known a good collery that can be so cheaply and economically worked, inasmuch as it is so near the sidings of the railway, and coals can be raised up and patinto trucks for 5s, per ton, including every expense, and the present selling price is 15s, per ton in the truck. This property has been reported when the property of the predering the present selling price is 15s, per ton in the truck. resultselling price is 15s. per ton, including every expense, and the less reported upon by Mr. Lake Stephens, the underground manager

of the Gnoll Collieries, whose practical knowledge and integrity cannot be surpassed, and with the additional knowledge of having known the property for the last 40 years, and stating his conviction that with a moderate outlay, as mentioned in his report, in six or nine months he could produce therefrom from 120 to 150 tons of coal per day.—Neath, Nov. 13.

MINING IN PEMBROKESHIRE.

MINING IN PEMBROKESHIRE.

SIR,—Your correspondent in the Supplement to last week's Journal has, I regret to say, touched but slightly on the real merits of Pembrokeshire as a mineral-producing county. We are led to understand that the mineral deposit is situated pretty nearly in the middle of a grauwacke and clay-slate basin, extending superficially from Cader Idris in Merionethshire to Precelly Mountain in Pembrokeshire, and are both alike situated in porphyritic rock. The great mining districts of Cornwall are principally situated in a portion of this grauwacke series or clay-slate, provincially called killas; if it there contains those veins of tin, copper, and lead which by their extraordinary produce have constituted the principal wealth of the county, we may fairly infer that Pembrokeshire possesses all the elements for successful mining. Indeed, the county can boast of vast resources, having an endless supply of lime and iron stone, coal and culm, splendid quarries of slate, copper, and lead; tin may be added at no distant period. It is true we have only one lead mine as yet developed—the Old Llanfyrmach—which has met with various vicissitudes since the days of the then Lord Milford, and under the management of old Captain Marsden, when the returns were truly marvellous. Subsequently it passed through various hands, each striving to pick the eyes out without attempting to sink a fathom. When it got into the hands of the late Mr. Turner a change took place—under the supervision of Capt. Patrick a fine course of ore was laid bare. The present proprietors have been for some little time preparing for a vigorous attack on the hidden treasures under the management of Capt. Roberts, who bids fair to bring the old mine to its former standard in olden times, and I verily believe the ore raised is not to be compared with what remains. A fortune was spent in the transit of the ore formerly. The present lucky proprietors will have the Taff and Whitland Railway within a few yards of the mine, and passing on by that s -Your correspondent in the Supplement to last week's Journal opening out on a distant part of the sett, which is carried on single-handed. This sett has been well reported upon by Mr. N. Ennor, who specially visited it, and there are many more within a short range only requiring capital and practical minds to develope the hidden wealth of Pembrokeshire. I should add that there is a large tract of white killas, decomposed quartz veins, and quartz reefs 4 yards wide.

AMATEUR.

MINING IN NORTH WALES.

SIR,—Capt. Knapp may infer from my remarks what may best suit his conveniency to extricate himself from a difficulty which neither his high-flown language nor his eloquence can do. He has placed the chain round his own neck, and he must either stand or fall by facts alone, and not by any inducements to draw me to another subject. With your permission, I shall offer a few observations re-specting his remarks. In one of his letters he terms mining in the locality—"Superficial scratchings, and one in which greater injustice has been done in the past than any that ever came under my observation. If there had been a lack of capital there was an equal lack of skill in its application. It is deplorable to contemplate the great waste of time and money by the superficial workings of shafts and levels which appear to have been blindly operated—expensive efforts misdirected. It was pre-eminently the digging season. At Trefriw granite occurs, and at the mine fossils of the Devonian period. It is superior that so much blindless should aviet when he the light gramte occurs, and at the finite rossns of the Devoman period. It is surprising that so much blindness should exist, when by the light of experience mining could be read as easily as the alphabet by a village pedagogue."

The above quotation is the substance of Capt. Knapp's effusion; and in the last impression of the Journal he beldly tells us that his object was—"The interest of Welsh mining and Welshmen." It is perfectly actounding that a writer who can so unsparingly consured.

object was—"The interest of weish mining and weishmen. It is perfectly astounding that a writer who can so unsparingly censure a mining population can so violently transgress the laws of politeness, after accusing them of incapacity, blindness, &c., that he could have the temerity in last week's Journal to say that his object in writing these remarks were "in the interest of Welsh mining and Welshmen." I do not think that a more injudicious statement was ever printed. If it is the interest of the Welsh miner to be held up as a straight important and one scratching in the dark then Cart as a stupid, ignorant, and one scratching in the dark, then Capt. as a stupid, ignorant, and one scratching in the dark, then Capt. Knapp has pre-eminently succeeded in figuring him out. But I say that his remarks, as far as the Nant Bwlch-yr-Haiarn miners are concerned, is as great a scandal as the most creative genius could devise. Justice imperatively demands, and I am in duty bound to say that these miners are famous for their industry and practical ability and more intelligent men no country has produced, and it would be well for many would-be sages to consult and learn from them. As far as he refers to these miners I will unhesitatingly say that it is a flood of slander and a torrent of abuse. The readers of the Journal may not be aware that the locality to which Captain Knapn's strictures apply has many mines, and that some of them Knapp's strictures apply has many mines, and that some of them have been worked under the directions of men of undoubted ability, learning, and experience. Some of them of such high standing that it would be an honour for many to act as their mining pages. I will ask the following gentlemen to read the description given by Capt. Knapp of Nant Bwlch-yr-Haiarn mining, and if they had a Capt. Knapp of word to say for their conduct and mining operations let them man-fully face the accusation:—Capts. Absalom Francis, Davy, Dean, Wasley, Plumber, Hitchins, Frank, &c. It is a wonder to me if one or more of the Pagan gods have thrown their prophetic mantle over the shoulders of Capt. Knapp to explore profundities, if they left the above list of gentlemen to scratch superficially for Nature's trea-sures. To think of such a distorted act would be a burlesque levity that would even force the granite rocks and the Devonian fossils to rush out in laughter.

In my letter I stated that the rocks in the vicinity of the mine are

and erlying the fossiliferous. I need scarcely add that my neaning was that they were below, and deeper. When we say that the granite underlies all other rocks it does not follow that all other rocks must overlie it. We find granite on the very top of mountains without any substance whatever covering it. I am aware that fossils have been found in the Lower Silurian rocks, but not in the Nant Bwelch-yr-Haiarn Mine, and I feel satisfied that it is more than ever Cart Krany can do to show them. Let him show them to Robert Capt. Knapp can do to show them. Let him show them to Robert Owen, the mining agent, who is an old miner and an intelligent man, if they are there. After all I am inclined to exclaim, in the words of an eminent divine, "What a pompous introduction to nothing!" I fear this fossil dispute will end just as the granite did—with a lame excuse. Yes; the lamest of the lame that was ever offered to the readers of a newspaper. It is ridiculous to think of a man bringing such accusations against his mining brethren, and proclaiming in the face of the world that granite occurs at Trefriv, and when he is asked for his authority he declares it to be-a village cocer. Did anything more absurd ever happen?
St. Asaph, Nov. 12. J. KENRIE.

FRON VELLAN MINE.

SIR,-I notice in last week's Journal a letter from Mr. A. Harper, late manager of this mine, and a very peculiar letter too, its peculiarity consisting in this, that after reading it one is just as wise as liarity consisting in this, that after reading it one is just as wise as before. He still speaks of the mine looking favourable; what I want to see is not "favourable spar," but lead ore. Capt. E. Harper, his brother, the present manager of the mine, has been telling us from week to week that this lode is promising and that lode is promising; it is high time that the lodes did something besides promise. We were told some time ago that the lode was producing 2 tons of ore per fathom. What has become of this rich lode? We hear nothing about it now. If there is a lode of this value why is another call made, payable in a few days? This call, in connection with the same monotonous "we expect something good shortly," and the utter absence of anything good at present, does not tend to raise the spirits of the shareholders.

If Mr. Harper thinks I have nothing to do but to answer his questions he is much mistaken. Concerning the course adopted by him the least said the better. I would ask him if he knew that the lode had changed its underlie till his father

came to show him? Mr. Harper, also, is very much mistaken in supposing that private pique has anything to do with my letters, and I cm inform him that the "anonymous scribbler" knows as much about Fron Vellan Mine as he does, and perhaps more. I again repeat that it is such mining—if it can be called mining—as is carried on at Fron Vellan that deters men from investing in Welsh mines.

1 Tremested.

FORTESCUE TIN MINE.

Is all this morning, I observed that the quoted price for the shares in this mine is about 9s. each, 1l paid up. This shows the truth of the repeated statements of your correspondents, that the quoted price of shares is no true inof your correspondents, that the quoted price of shares is no true index of the value of a mine. I have known very poor, perfectly unproductive mines quoted at prices ridiculously high; and those producing mineral, with the best prospects, quoted ridiculously low. Such is the case with regard to Fortescue. It is a tin mine of rare promise, having many lodes of a "masterly" character, all of which are yielding stuff for the stamping mill. Many tons of tin are now ready for the calciner, which, in passing through the mine to-day, I saw in the hutches. It has been intimated to me that the depression in the price of the shares is attributable to the operations of some brokers, whose interest, no doubt, it is to obtain them at a low figure. I advise those gentlemen who hold shares in the property not to part with them under par; for, when the sales of tin begin they will, doubtless, cause a great advance in the quotation, despite the artifices and machinations of selfish and unprincipled men. The machinery on the mine is of the best description, and every appliance for the dressing of the tin is now nearly complete. The next addition to the machinery should be that of 36 stamp-heads, that the mass of tinstone, so easily accessible, should be reduced in greater quantities. Higherto carts were in use for carrying the tinstone to the stamps. This expense is now obviated by the construction of a railway, extending from the stamping-mill to all the points of surface operations. The dressing apparatus is constructed on the best and most improved principle. There are 65 self-acting frames, which retain all the slime tin, so that there will be no loss, as in the mines adjoining the Red river, of which so much complaint has been made.

Camborne*, Nov. 12.

A TIN MINER.

FORTESCUE TIN MINE.

FORTESCUE TIN MINE.

SIR,—"Shareholder," who proposed a question in last week's Journal as to the absence of reports on this mine, is respectfully informed that the majority of shareholders desire it, and the agents have been instructed to suspend for the present the weekly reports, in consequence of the depreciation of the shares in public estimation, occasioned by the conduct of ill-disposed person or persons. The mine will speak for itself shortly, by means of the sales of tin ore. The quoted value of the shares "in a mine such as this" is most unnatural, and can be accounted for only on the ground of artificial dealings, for most of the shareholders are investors, and weald not think of placing their shares in the market at such ridiculously low prices as they have been quoted at. If any shareholder desiring information will apply, with his real name and address, to the secretary, at 32, New Broad street, London, he will obtain it from—

J. Harris-James, Managing Director.

Grampound Road, Cornicall, Nov. 13.

FORTESCUE MINE.

BIR,—In your last week's Journal "A Shareholder" asks why it is that reports on this mine have not appeared in the Journal for some time past. As I have a knowledge of the mine, as well as of the district in which it is situate, and feel a pleasure in every successful speculation, and having made enquiry on the subject, I will answer your correspondent's question. The reason is this. About two-thirds of the shares are held by Cornishmen and Ecotehmen, who have been so disstified with the wicked brokers in "Bearing" the shares (for how otherwise can the depreciation of the shares in so valuable a mine be accounted for?) that they have instructed the agent to withold reports, for the present at least. I am at liberty to question, and do question, whether your correspondent is a shareholder, for the shareholders know that any information relating to the mine can be readily obtained thereat, or of the secretary, 32, New Broad-street, London. An Agent.

St. Stephen's Church Town, Nov. 11.

St. Stephen's Church Town, Nov. 11.

ROSE UNITED MINE.

SIR,—The causes to which the promoters attribute the collapse of this company appear primarily the stoppage of Great Wheal Busy, and, secondly, the refusal on the part of the ford to allow operations to be continued at the shallower levels. How far the stoppage of Great Wheal Busy affects Rose United is best known to local shareholders; but it seems incredible that the lord after receiving, I believe, 5000f. for machinery supplied to the mine, and then relinquishing his holding of 500 shares, should have so little sympathy left for the remaining shareholders as to deprive them of the only resource of retaining their interest until better times should justify a full development of so valuable a property, when other lords, on whom there is less claim, are reducing their dues, and, in some cases, temporarily remitting them. Being thus driven into liquidation, it only remains for us to make the best bargain of what remains; and as the resolution, confirmed on the 5th inst., renders London shareholders powerless, it now devolves on the local adventurers to see that machinery costing such an enormous sum be not sold in 'a corner.' Should the lord decline to take the said machinery, the promoters propose then to sell it privately, but I have not the slightest doubt that the best and most straightforward course would be to submit it to public auction, as required by the Stannaries Act.—London, Nov. 12.

EAST VAN MINE.

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EAST VAN MINE.

EAST VAN MINE.

The company will take place upon the 28th of this month, due notice of which will be sent to all shareholders, who will then have an opportunity (if they attend) of ascertaining personally from Capt. Williams, the manager, his opinion of the future prospects of this valuable property. I may add Capt. Williams was the discoverer of the Van Mine, and no man knows the district and bearing of the lodes better than he does, and few mines have better prospects than the East Van, with 7246. unexpended capital at the bankers.

33, Poultry, E.C.

WHEAL MARY MINE.

WHEAL MARY MINE.

SIR,—For some months past we have repeatedly been informed by circular and reports in the Maning Isurand of the piles of tinstuff on the ground at the abovenamed mine ready for the stamps, but no sales have been realised to reward the
statement of the shareholders. At last we find that coal has arrived at a neighbourng station two miles distant, and trust that the managers will instantly avail
hemselves of it, and use their utmost diligence to obtain a supply which will sufice to keep the stamps going.

A Shareholder. ice to keep the stamps going.

UNTRUTHFUL PROSPECTUSES.

SIR.—Allow me to inform "Justice" "whose letter appeared in last week's Journal) that by what is commonly called the Companies Act it is enacted that if anyone connected with a publicoompany shall make, or concur in making, false statements about that company, with the view of deceiving shareholders, he shall be liable on conviction to the punishment of penal servitude. If "Justice" and his fellowshareholders will act at once with proper legal advice, they will either get their money refunded or punish the delinquents as they deserve.

CAUTION.

ON DEEP AND SHALLOW MINES.

Sire,—I have noticed this past two weeks Mr. Ennor's remarks on deep and shallow mines. I quite agree with Mr. Ennor's remarks that many lodes, slides, elvans, and cross-courses can be and are discovered at surface, and proved so as to warrant and justify the slinking of deep shafts and erecting expensive machinery. We have a copper mine (as will be seen in our advertisement) that was opened several years since by the means of a railway cutting; indeed, the gossan of the lode on this has been traced into the hill, which will give 46 fms. of backs to stope away, with a supply of water from the River Camel that could sink the mine lof athoms deep if required, by water-power, and is close by the side of the railway. The lodes run through the whole length of the mine, which is about one mile in length on the course of the lodes. These lodes have been opened up, and about 7 tons of splendid copper ore taken out and sold—indeed, this a splendid property, and is held under grant from Lady Molesworth at 1-18th grant, and capitalists would do well to turn their attention to such properties as the one described instead of going into a deep sinking and erecting heavy machinery. By driving this adit level 40 fms., and then cross-cutting the lodes, I am sarguine would lay open a splendid mine; then, if found necessary to erect pumping machinery, could determine fully where to place the shaft, which could be worked with water-power, also water for crushing and dressing. I may here-remark that the stratum is slate killas, a mineralised stratum of ground; and, indeed, from what I have seen of this property I am fully persuaded there is a rich mine to be obtained with shallow workings.—Roche, St. Austell, Nov. 12.

MONTE ALBO MINING COMPANY, SARDINIA.

MONTE ALBO MINING COMPANY, SARDINIA.

Sin,—An extraordinary general meetir go it his company was held on Oct. 30, as their offices, but with the exception of three lines in the Journal, announcing that the company would be wound-up, not'hing whatever has been published, or even printed, of the proceedings for the shareholders, more than one-half of whom were absent from the meeting. The company has been in existence 3½ years, has held four general meetings, has paid no dividends, has never had a quotation on the Stock Exchange, and is now being wound-up on the petition of its own Chairman in the Court of Chancery, the solicitz to the petition being the solicitor to the company, and the liquidator appointed being a director and deputy-Chairman of the company, the petition having also been filed in August without the shareholders ever being consulted on the subject, and the general meeting held within eight days of the dute when the retition was appointed to come on for heaving. The managers, company, the petition arising also been med in August Without the State-loads of the date when the petition was appointed to come on for hearing. The managers, in the's last report, read at the meeting on Oct. 30 (but dated June), gaye a favourable account of the progress of the mine, and at the same meeting it was mentioned that a private but favourable report had been made to the Chairman. Why, then, is the mine so suddenly wound-up when these statements are made? not a single suggestion being offered by any of the directors to try and save the company from wreck and ruin. But an announcement was made to the effect that the mine would be purchased or taken out of the Court of Chancery and worked by the director who filed the petition. From the mine has been raised over 3000 tons of lead ore during the 3½ years existence of the company, but thanks to all concerned, this has cost about 20% per ton to raise, and has been selling at about 10%, per ton (according to the statement of accounts issued). The original cost of the mine to the company was 86,000%. The petition now filed represents a creditor of 13,000%, exclusive of debentures and shares. What the original and present directors think of all this we shareholders know little, but a greater muddle and a worse piece of bungling it seems not possible to conceive, even before the mine could be taken possession of nearly 5000% had to be paid to clear up the title.

I should be gliad if, amongst your numerous correspondents, any of them could give some information as to the actual condition of the mine from personal observations they may have made during a visit to Sardinia.

A SHAREHOLDEE.

CHONTALES CONSOLIDATED MINING COMPANY.

CHONTALES CONSOLIDATED MINIOUS CONTAINS, as regards the desire to have a shareholders' director, allow me to say that not only would proxies be unavailable if not sent by return-post, but that time only allowed of one half of the shareholders being applied to; yet, under these disadvantageous circumstances, the large number of 10,044 were returned by Wednesday—some not in time, the applications for the country not having gone out till Monday night, and some of those for town having been posted on Tuesday. The proposition was

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never put, but this desire on the part of the shareholders was set aside at a meeting of 21 members, including directors, one member not voting, by an amendment being carried that it was not expedient to elect another director.

WM. Burke RTAX.

MINING IN COLORADO TERRITORY, UNITED STATES.

MINING IN COLORADO TERRITORY, UNITED STATES.

Sir,—From my previous letters you will have seen that my principal object was to point out the solid advantages of Colorado mines as a field for the judicious investment of English capital, and as a warning to avoid the schemes, as plausible as they are fallacious, which professional speculators are continually trying to palm of upon the English public. It is the heavy companies that have so long depressed mining in Colorado. Hundreds of thousands of dollars have been spent over and over again on mills and other reduction works before their mines have been thoroughly explored to ascertain the quantity and quality of the ore, and, when finished, have as often been found utterly worthless, or remained idle for lack of material to keep them in motion. It is, therefore, with deep regret that during a recent tour through Park and Summit counties I observed the same suicidal policy being carried out by an English company in Hall Valley, Park county. This company has purchased a number of lodes and locations on the very crest of the Rocky Mountains, most of them above timber line, and for seven or eight months of the year nearly inaccessible. The principal one—the Whale lode—has a pay streak of from 6 in, to 2 ft. of low-grade ore. To every practical miner here it is well known that these mines can only be made to "pay" under the most advantageous circumstances, while their almost inaccessibility can scarcely fail to bring failure on the undertaking. Again, this company, like their predecessors, are expending thousands upon thousands of dollars upon railroads and mills before they have explored any of their mines, except to a very insignificant extent, and before they can know whether or not they have any ore to reduce.

Let intending investors come out here, and with the assistance of

Very insignificant extent, and before they can know whether or not they have any ore to reduce.

Let intending investors come out here, and with the assistance of some uninterested practical miner personally examine the mines of this and the neighbouring counties of Park, Summit, and Boulder, and they can find investments as good as that of the famous Park Pool Association, which in three months of the present year divided \$30,000 on a paid-up capital of only \$20,000. Daniel Roberts.

Georgetown, Clear Creek County, Oct. 23.

AMERICAN MINES-OLD TITLES-A NEW DIFFICULTY-THE EMMA MINE.

THE EMMA MINE.

SIR,—The many unforseen, incongruous, and overwhelming difficulties which have heretofore beset American mines, jeopardising their existence in the English market, were already sufficiently multiform in character to have rendered it next to impossible for any new difficulties to present themselves. But, unhappily, such is not the case, as another question has arisen—that of "old titles."

To afford your readers some idea of this vitally important question, which is at present engaging the attention of the American law courts, and debated in the American press, I cannot do better than, in the first place, quote from an American paper one instance as bearing upon the Emma Mine. The writer in question says:—

I think it is fairly deducible that there were certain parties who were at a certain period in possession of the Emma Mine, who claimed to own it under valid titles, and who had applied for a patent upon it; and that Park and Co, belonged among them, or were the agents of them; and that there was also another party, who claimed to own the mine under certain adverse "old titles," but that they were not in possession and had filed their protest to the patent; that in this latter party were Lyon, Lent, and another; that for \$100,000 Lent declined to expose any irand allowed the patent to be issued; that for \$100,000 Lent declined to expose any irand there may have been in the manner of obtaining the patent, and thus permitted Park and Co, to effect a sale in London; and that when the contest between the two parties came on for trail before the Court in Salt Lake the managers of the Emma Hill Consolidated Company, which is the organised claimant and owner of these "old titles," did, for the sum of \$100,000 consent to have a verdict rendered against their own company and in favour of the purchasers and present owners of the Emma Mine.

Another writer says:—

against their own company and in layour of the purchasers and present of the Emma Mine.

Another writer says:—

My interest is indissolubly connected with "old titles," and is dependent upon their ultimate success; and although I believe the Courts of the country are the only proper and legitimate tribunals for the discussion of their merits and the settlement of their claims, yet I have a few questions to put, or statements to make. If it be shameful and treacherous for one party to seek indemnity for his own in terest, outside of the combination and to the detriment of the whole, is in out much more so for another partner, upon the profession of integrity, to absorb into himself the management of the whole concern, and to set at naught the wishes and the rights of his deluded but equally interested colleagues? Dividends are useful in the way of paying personal expenses, if one can only collect them, but when they admit of division and adhere tenselously to the pockets of but one partner, I fail to discover of what earthly benefit they are to the other parties in interest. Theoretically the thing is grand, but practically it is quite absurd, and very much resembles some fantastic effort to "cloy the hungry edge of appetite by base imagination of a feast."

It appears that the officers of the Emma Hill Consolidated Company own nine-tenths of all the adverse "old titles," the validity and equity of which are urged from the fact that the first party, or some members of it (or some agents of it), paid to designated members of the second party certain specified sums of money for the purpose of consummating their enterprise.

I dare not further tread upon forbidden ground, except it be to add that this is a question in which each shareholder in an American mine has a direct interest, and fully explains the basis upon which adverse claims are continually cropping up, so utterly perplexing and disconcerting to all associated with existing incorporations.

London, Nov. 10.

RICHMOND CONSOLIDATED MINING COMPANY.

RICHMOND CONSOLIDATED MINING COMPANY.

SIR,—I do not aspire to the possession of the intellectual attributes of your gifted correspondent, Mr. Postlethwaite, and, therefore, his euphemistic metaphors, so elegantly expressed in the "ruffling of feathers" and the "laying of eggs," I am compelled to pass as too transcendant for the ken of ordinary intellects, and come at once to facts. Unfortunately, I shall be unable to be present at the general meeting of shareholders, on Inesday, but, for my own information, as well as that of many fellow-shareholders with whom I have conversed upon the matter, I should like the Chairman to reply to the following questions:

1.—Upon what ground is credit taken for 23,5394. (balance at debit of capital ac count), as this item appears in the general balance-sheet?

2.—From whom is owing the item of 10,5364.—"sundry debtors?"

3.—If it takes 6 tons of ore to produce 1 ton of bullion, of the value of \$250, from which has to be deducted the cost of its freight to market, a distance of 200 miles (and it costs 40 cents per bushel for charocal, 35 cents for smelting, 38 per ton for raining, \$5 for haulage, \$1 for iron ore and lime-rock for flux, and \$2 for incidental expenses), what is the amount of net profit recount" (\$486,200), estimated returns due on "unrealised shipments," based upon a bullion value of \$1 50 c. per oz., or its actual present value of \$6 cents per oz.?

5.—Is the explanation of the recent desire to borrow money on this side to be found in the difficulty, if not impossibility, of selling bullion, even at its reduced value? If this be so, why are the directors in their report perfectly silent upon a point of such importance?

Information from the Chairman upon each of these queries would be gladly accepted by many, and not less so by me.—Not. 10.

A Shareholder.

ENGLISH MINING-ITS PRESENT AND FUTURE.

SIR,—"Fair Play" is again facetious and kind; but "Observer" is, as usual, both morose and insolent—nevertheless, I am fully prepared to respond to his most unwarrantable attack upon the probity of my best friend, and I again repeat that the Devon Consols, Gawton, to respond to his most unwarrantable attack upon the probity of my best friend, and I again repeat that the Devon Consols, Gawton, Wheal Crebor, Hingston Down, Pringe of Wales, Wheal Barnard, and other mines will average 6 ozs. of silver per ton of stuff taken from the lodes, save and excepting Wheal Barnard, which gives 10 ozs. This is a matter that can easily be proved. Let a sample of 5 or 50 or more tons be taken, and submitted to Dr. Phippen, Mr. W. White, of Finsbury place, and Captain W. Knott, and I will pay for the assays, provided that "Observer" discloses his real name, and will place samples at his own cost in the hands of any three other assayers he may choose to elect. That there will be a great difference in the products I do not doubt, for within the past few weeks, even in rich ore, from my own practical experience, assayers have differed from 100 to 300 ozs. of silver in a ton of stuff, and, therefore, it stands to reason that in very poor ores one may make 5 ozs. and another 2 ozs.; but this will prove the secret, and let the assayers have a warm discussion, and settle the matter between themselves. One thing is quite clear—the silver cannot be extracted unless it exists, and the man who obtains the best product must have the truest card. Should Captain Knott be at the top of the list, I will accompany him to any assay-office in England, and after he has proved himself to the satisfaction of his brother assayers, my very intimate and most esteemed friend, Barnard the Quack, will go through his performance with 7 lbs. of the ore, and give ocular demonstration of how it can be successfully and commercially treated upon a large scale; fortunately, his working apparatus is not very extensive, and can be picked up in any English town—since it simply consists of a frying pan and flower pot, with a bit of old liene to act as a filter, add to this a handful of salt and one or two simple chemicals, and without my magic twist of the wrist—lo! behold in better secret than sichemy is revealed. Yes, my fr It is amusing to find that the west of all Company have taken the matter in ha

of the representatives were ridiculing the efforts I was making to reach the goal of success, and they had then about as much thought as the world-renowned West of England and South Wales District Bank of treating low-deas silver and copporing back the real value of the silver from the miner, or, more probably, he is a great representative of mining task, and fears that the quade with have all the dopy and representative of mining task, and fears that the quade with have all the dopy and representative of mining task, and fears that the quade with have all the dopy and proposed the control of the co

THE FUTURE OF CORNWALL.

At a time when so many persons—mistakenly, as we believe—appear to be of opinion that the future of Cornwall—that is, in its mineral relations—is something more than trembling in the balance, appear to be of opinion that the future of Cornwail—that is, in its mineral relations—is something more than trembling in the balance, there is a special interest attaching to all signs of increased vigour. Nowhere are such signs more manifest than in connection with the vast undertaking—for it is no less—of the Cornish Consolidated Iron Mines Corporation. And yet there are not a few Cornishmen who still hesitate to believe that this gigantic concern really means business. Some allowance must, we suppose, be made for men whose predecessors, and who themselves, have neglected to develope the most remarkable lode which the county possesses—a lode which has been known for years, the width of which is measurable by the yard rather than by the foot, and which may be traced from its outcrop in the cliffs of Perran Bay for mile after mile inland. If Cornishmen with their practical experience had passed it by, was it likely that strangers would be able to make anything of it? Well, perhups at first sight there did appear to be sometting in this; and perhaps it was not more than was to be expected that the spirited and far-seeing combinations of Mr. Roebuck should be looked upon a little askance. We are hardly exaggerating when we say that for months the schemes alike of the Iron Mines Corporation and of the allied undertaking—the Cornwall Minerals Rallway and Harbour Company—were regarded by the majority of the inhabitants of Cornwall as a pair of the finest castles in the air that had ever been known even in a county that was not unused to wild projects. As to the mines—first it was said there was no iron there; and then that if there was it was worthern to carry. What the next stage will be remains to be seen. Plenty of people are wise after the fact.

A brief visit to the works on the Perran lode will satisfy anyone who knows any-

in when they were seen an account of the proper in the next stage will be remains to be seen. Plenty or people is is after the fact.

I brief visit to the works on the Perran lode will satisfy anyone who knows anyong at all about mining that the Corporation mean business, and that they have the material they need to work upon. The operations will extend over nearly whole line of the lode between Duchy Mine (late Duchy and Peru) and the set, is tance to some three miles. Throughout this distance the lode varies from about if feet to 20; being composed chiefly of spathose from and hematits, both of very the quality. Rumours have been circula act that the ore is worthless for the best rposes, on account of the quantity of phosphorus it is assumed to contain. This, were, is not the case. The analyses of Mr. Collins, the consulting engineer and mist to the Corporation, have shown that the ores which do contain phosphorus limited in extent, and the quantity of phosphorus so small as not to interfere the the useful properties of that part of the ore for producing iron of the second ality. The bulk of the ore is, however, thoroughly adapted for the manufacture latity. The bulk of the ore is, however, thoroughly adapted for the manufacture.

with the useful properties of that part of the ore for producing iron of the second quality. The bulk of the ore is, however, thoroughly adapted for the manufacture of the highest quality Bessemer. Then, in addition to the great iron lode, the district is traversed by numerous lodes of lead, which have been found very rich at the points of junction. That the Corporation, therefore, have plenty of good material to work upon is clear.

At Duchy Mine the ore raised is chiefly spathose, and large quantities are already at grass. A new shaft is now being put down—known as Roebuck's—which will be one of the finest in the county. The next mine to Duchy on the line of the lode sex ward is Great Retallack. This is not yet the property of the Corporation, but shortly, we believe, will be. About haif a mile further off, at the foot of the hill on which Duchy stands, is Treamble. Here the works are being carried on upon a most extensive scale under contract with Sir Morton Peto. The lode is not mined but quarried, so great is its bulk and so large the quantity of iron, both spathose and hematite. The ore is being brought out by trams, and not far short of 20,000 tons already raised and stacked for carrying away. As the excavation is in the face of the hill, and the lode is productive to within a few feet of the surface, it is hardly possible to over-estimate the immense quantities of ore that can be raised at this spot alone. At Treamble will be erected furnaces for calcining the spathose iron before sending away, which will raise the produce 40 to 50 per cent. Here, too, will be brought in the branch of the Minerals Railway, by which the ores will be taken off, and the coals and materials brought up. On the hill immediately beyond Treamble is Mount Mine, worked by another company, by an incline. The excavation is very large, and thoroughly proves the continuation of the lode. The over from Mount are sent to Truro by road. From Mount to the sea, the lode is within the set of the Corporation. It has been proved in the most is revealed. Yes, my friends, a simple flower pot in the hands been the means of turning mining from beggary and starva-been the means of turning mining from beggary and starva-wealth.

denote the West of England Fire-elay, Bitumen, and Chemi-ken the matter in hand, as it is only a few months since some

The same of turning mining from beggary and starva-for its thorough development. Probably, among the sand hills, the best way would be to mine, but nothing would be easier at the Wheal Mary end than to drive upon it from near the sea level.

It is no exaggeration to say that a couple of thousand men might be set to work

upon the lode within the rights of the Corporation. That the Corporation with spirit the name of their Chairman, Mr. Sheriff, M. P., is a smith with spirit the name of their Chairman, Mr. Sheriff, M. P., is a smith Already a contract has been entered into to send over the new railway of 1000 tons of ore a day from the Perran and other mines. As to the railways, the Perran branch is fast advancing towards on thanks to the energy with which they have been carried out by the Morton Peto, they will be finished before the time appointed—next the heavy works in connection with the Fowey tunnel, the whole mit the spring, and possibly still may be. That the new newdes of the very large traffic is now generally admitted, not only in 1000 ore, being a continuously. The carriage and shipping facilities which will be profine with this latter article will give the clay merchants a second profinerest, locked-up capital, and demurrage. When the companys plated their scheme by opening up railway communication with St. will have become the greatest benefactors Cornwall has seen for a least.—Western Moranag News.

WASTE PRODUCTS, AND UNDEVELOPED SUBSTANCES

WASTE PRODUCTS, AND UNDEVELOPED SUBSTANCE.

For the past twenty years our best authority upon the utilistic of waste products has probably been Mr. P. L. SIMMONS, so this new volume* will be generally acceptable. It is, as he result one of the most important duties of manufacturing industry of useful applications for waste materials, and, quoting Playfar, he reminds as the cast off woulden garments of the poorest inhabitants of The industry of the cast off woulden garments of the poorest inhabitants of The industry of the cast off woulden garments of the poorest inhabitants of the link of the substitution of the ink now written with was possibly once pair is a substitution of the ink now written with was possibly once plot whether of an old beer barrel. The bones of dead animals yield the chief constitution of the ink now written with was possibly once plot whether on a cast of the ink now written with was possibly once plot whether on the effects of his deband. The offal of the streets and the morning tone re-appear carefully preserved in the lady's smelling bottle, or are used by left alwayer blancomanges for her friends. This conomy of the chief consists, their dead bodies passing into purifying seage into the asmosy, where is again mould then into forms of organic life; and these plants extually costs of a past generation of ancestors form our present food. The offal of the streets and the wealth of the contract of the protuce descendent of the seage of the protuce descendent of the substitution of the seage of the protuce descendent of the subject of the utilisation of sewage in the particular and their required the subject of the utilisation of sewage in the formed protuce descendent of the subject of the utilisation of sewage in the subject of the utilisation of sewage in the form of the subject of the utilisation of sewage in the form of the subject which had died or been killed in Paris and its environs. The colike the general public, at first prejudiced against horse flesh, it that prejudice in the terms of their report. "We cannot dies to their than very good and very savoury; several members have eaten of it and they did not find that there was any sensible it and beef." The manner of preparing the meat has, it is said, a Cooked as a ragout horse flesh occasions a derangement of the hear observed among those who have eaten it roasted." The consumercased from less than 2009 in 1896, to 65,009 in 1870 and 1871. horse flesh is made which it is said will bear a fair comparison we Old boots as a dinner luxury is another matter which Mr. Sim minently forward. Throwing an old shoe after a newly-marria a new application hereafter. It will be not only an emblem of grantial present. It should be publicly known that it is sheer boots and shoes into the streets as useless and of no value. They for nobler uses and made to contribute to the delectation of the can be done was illustrated by a chemist lately at a meeting Liberal Club. He exhibited for the information and examinate a jelly made out of an old boot. The fellow of the boot of which stood alongside, and proved to be a veritable old fellow, who becars of a long and useful life. Subsequently the learned gentle process of the manufacture. Skins, said the professor, are no but after they are exposed to the action of taming they become condition insoluble. If, however, the leather of a boot be put with lime and water where it can be subjected to the pressure free two atmospheres the tannin unites with the lime, and the leath into its original gleathen, and can then be cast into a mould and The descriptions of the processes by which various grasses, fer two atmospheres the tannin unites with the lime, and the leath into its original gleathen, and can then be cast into a mould and The descriptions of the processes by which various grasses, fer two atmospheres the tannin unites with the lime, and the leath into it

Throughout the volume Mr. Simmonds has given evidence of a tensive research and of careful consideration of the various commic points involved, and the perusal of his book will certainly that suggestions which many engaged in industrial pursuits will be account.

* "Waste Products and Undeveloped Substances: a Synopsis of Progress their Economic Utilisation during the last quarter of a century, at home abroad." By P. L. SIMMONDS. London: R. Hardwicke, Piccadilly.

CHEMISTIANITY.

One of the most original and at the same time most remarkable treatises on Chemistry has just been published by Mr. J. CARRIGOUS SELLARS, F.C.S., of Birkenhead, under this title - intended. appears, to teach the elements of the science by embodying a sub-ment of its leading principles in a poem of a couple of hundred 1988. appears, to teach the elements of the science by embodying a ment of its leading principles in a poem of a couple of hundred; The metre is not, perhaps, in all cases so accurate as that of Tean but Mr. Sellars has evidently striven to imitate the poet-laures the large number of obvious truths which he has succeeded in compession comparatively small colume will abundantly compensate for any shortcoming with the complained of in other respects. It is somewhat difficult to decide whe poem should be classed with epics or lyries; but a specimen may suffice the poem should be classed with epics or lyries; but a specimen may suffice the more discriminating reader to judge for himself. He says—

"In every race there are odd characters,
Whose powers for reflection are deficient,
Oft lacking space to sublime emanum thoughts,
Such an one no sconer conceives an idea
Than his innate force, forces instant speech;

By these faults he's open to be only witted.

By these faults he's open to be outwitted,
Unless governed by sobered premium thought."
Now, allowing for "Nature's atomic oddness," we must acknowledge this as fine a specimen of poetry as has yet been produced from the laboratory of mist, the next in the order of merit being, without question, that contribit the volume by Mr. Wm. Valentin, F.C.S., the chief demonstrator of praises mistry in the Royal School of Mines, for, apparently in reply to a request Mr. Sellars for permission to make extracts from his book, the author of the Royal School and the results of the Royal School of Mines for, apparently in reply to a request Mr. Sellars for permission to make extracts from his book, the author of the

Mr. Sellars for permission to make extracts from his book, the administry writes—
Book of Practical Chemistry writes—
"If in my book any lines you can discern,
To ease your work or serve a happy turn,
Take them, and mould them to your will,
Most troly, yours—VALENTIN BILL."

The last verse is the work of another hand, but as a blank is left in the no other words for completing the stanza instantly presented themeless Sellars gives evidence of having also received suggestions from Dr. Franking less poetical than his demonstrator, has written sober prose, and from Mr. Watts, F.R.S., so that heonly offers a proper acknowledgment for the honoser enabled to associate such names with his poem, although it may be quite us they can claim no share in the actual production of the poem itself, when left "I most sincerely thank my chemist friends,
For marking errors, their correction tends,
To make my humble work if it should please,
In learning Chemistry, a book of case.

So much for the procemium, and, with regard to the prologue, no don't readers, when they have carefully perused it, will say with Mr. Sellars—'I have carefully perused it, will say with Mr. Sellars—'I have carefully perused it, will say with Mr. Sellars—'I have carefully perused it, will say with Mr. Sellars—'I have carefully perused it, will say with Mr. Sellars—'I have not make any initiate of the Goesptor.' I should have a self-late of "Simple Substances, with Natural Law the work, which treats of "Simple Substances, with Natural Law the addition of one more to the many systems of writing chemical formits the addition of none more to the many systems of writing chemical formits the addition of none more to the many systems of writing chemical formits that chemical commits, it may fairly be hoped that the publication of the volume will itself the second of the stone will be addition of the volume will.

""Chemistianity" (Popular Knowledge of Chemistry), a Peem; also as

"Chemistianity" (Popular Knowledge of Chemistry), a Peem; shors of torical Verse on Each known Chemical Element in the Universe. By J. Observations of the Universe. By J. Observations of the Universe. By J. Observation of the Universe of the

Sept state 18,2

TANCES.

selars both "Veyan" and "Yayan," contributed by readers who accept his serion teaching chemistry cum grano Eblmis.

The volume is one which will, doubtless, be exta Lively read, and the volume is one which will, doubtless, be exta Lively read, and the student need learn nothing which he will afterwards have unlearn; whilst it has the recommendation that it presents many unlearn; whilst it has the recommendation that it presents many the facts in language which will be less easily forgotten than that the facts in language which will be less easily forgotten than that the facts in language which will be less easily forgotten than that the facts in language which will be less easily forgotten than that it is customary to employ. The poem is undoubtedly peculiar, is, nevertheless, well worthy of perusal.

nevertheless, well worthly of Potassian preventions and the sex plained in the third edition of the pamphlet by sex plained in the third edition of the pamphlet by sex plained with the sex plained in the third edition of the pamphlet by sex plained by Messrs. Marlborough and Co., of Warwick-lane. The first portisised by Messrs. Marlborough and Co., of Warwick-lane. The first portisised by Messrs. Marlborough and Co., of Warwick-lane. The first portisised by Messrs. Marlborough and conceptually and is intended to encourage those who are more cautions to learn success, on the ground that "patents are perhaps the only safe means attended in the ground that "patents are perhaps the only safe means attended in the ground that "patents are perhaps the only safe means attended in the ground that "patents are perhaps the only safe means attended in the ground that "patents are perhaps the only safe means attended to a mend the Law relating to the Fraudulent Marking of iven the As on patent law showing where patents can and exmoot and giving some particulars upon the leading points of the several laws, safe giving some particulars upon the leading points of the several laws.

Meetings of Bublic Companies.

RUSSIAN (VYKSOUNSKY) IRONWORKS COMPANY,

SIAN (VYKSOUNSKY) IRONWORKS COMPANY,
und meeting of shareholders will be held on Tuesday,
to the directors states that the capital of the company, which, in the
1981-2, appeared as 44.795, consisting of 2935 shares, with 171, paid, is
1981-2, appeared as 44.795, consisting of 2935 shares, with 171, paid, is
The whole of the capital has been called up, in accoordance with the
The whole of the capital has been called up, in accoordance with the
same thus fully paid up have been converted into stock. During the
same thus fully paid up have been converted into stock. During the
same apparent of the fourth instalment of 2033; 68, 5d., due on account
the payment of the fourth instalment of 2033; 68, 5d., due on account
if advance, leaving 20,000, still to be paid in equal annual instalment
to the Russian Government, on the account for arrears of interest,
to the Russian Government, on the account for arrears of interest,
of the company have been further reduced by the re-valuation of
y of materials taken over by the company in 1955. The amount of
or been mutually agreed, and reduced by the sum of 4575; 98, 1d.
las been disposed of in reduction of the purchase account, which now

en disposed of in reduction of the company with the leesor able to report that the relations of the company with the leesor assia continue to be of a very friendly and satisfactory cha-ics of the past year have been submitted to and approved by the seor of the works, who is entitled to three lifths of the profits re of the profits of the works for the past year amounts to indently of the sum of 260% 13s. 4d, allowed for London ex-te terms of the supplementary contract concluded last year, continuity of the supplementary contract concluded last year, 19s. 3d., which makes the total profit for the year accruing to

id., when makes use took parts to the year according directors have already paid an interim dividend of 5 per and they have declared a further dividend of 10 per cent., lee on Nov. 19—making 15 per cent. for the year. The balance of profit, after payment of the dividend and egtors, be carried forward, in view of the liabilities of the overnment still outstanding. It has been necessary to meaks since the date of the balance sheet, in order to due to the lessor for her share of the year's profits, as I to the proprietors and current charges. Hitherto the s have been made on better terms than the preceding occasion, the market has been less favourable, and it mit to a reduction in prices for all sorts of iron except

CLIFTON SILVER MINING COMPANY.

ral meeting of shareholders will be held on Nov. 24. The

eral meeting of shareholders will be held on Nov. 24. The report to be presented states:—
year a variety of circumstances have, much to the disappointment ores, prevented the progress and development of the company, and used the funds of the company to a very low elb. Mr. Hiran P. of the former owners of the mine, was appointed manager in July, ses since received show that three of the workings are capable of equanties of ore. From independent sources the directors are assured pany's property is undoubtedly a good one, but the concurrent face justified to the company be completely successful. Some acknowledged, and re is an extensive and reliable market for the sale of such ores will so the company be completely successful. Some of the ores mined were took charge of the property have been sold at fair prices, but the sufficient to provide for expenses. Under these circumstances, of the smallness of the fund now available for all the purposes of the directors have curtailed the mining operations for the present, and agent to stop further development, and as far as possible to make agent to stop further development, and as far as possible to make the succession of the property and the purpose of the presence of the property and the purpose of the fundance of the present, and agent to stop further development, and as far as possible to make the property of the property o

ompany referred to in the last annual report did not get its.

The concentration works of Mr. Collom have been lately set at 150 tons of Clifton ores have been sent to his works for treat-are not yet known, but may be received before the day of the

RICHMOND CONSOLIDATED MINING COMPANY.

meral meeting of shareholders, to be held at the City Ter-Hotel, Cannon-street, ors will be presented: et, on Tuesday, the following report of the

annon-street, on Tuesday, the following report of the persented:—
the shareholders the annual statement of accounts and balance-ending Aug. 31, the directors beg to congratulate the shareholders sition of the company. The year just ended has been both to sition of the company. The year just ended has been both to relieve the company. The year just ended has been both to relieve the telephone of the Richmond Mine, running under an adjoining own as the Look Out, and belonging to the Eureka Company, to of the ore of the Richmond Mine, running under an adjoining own as the Look Out, and belonging to the Eureka Company, to Richmond Mine lying under the Look Out, and claiming the right to Richmond Mine lying under the Look Out, and claiming at any damages against this company for the ore taken out by them, bearing this, immediately took the necessary steps to protee the rests, and cabled out instructions to obtain the best legid assistly, and to defend the mine at all hazards. As the shareholders vailed themselves in November of Mr. Corrigan's and Mr. Proceed to the mine to assist the directors in the defence. In De-Eureka Company obtained expante an interim order restraining a removing any bullion and ore from the dumps (about 4000 tons), an order to have the mine surveyed by a Government official; of the case in January, 1873, the interim order was discharged, were enabled to resume operations partially, they being left in the mine, and free to extract orc. e the company's representatives were engaged in obtaining evidits rights; they had surveys made by experts and others, and they were, fortunately, able to secure the services of Mr. Clarence own American Government Geological and Mining Surveyor, as of the greatest importance at the trial, and was considered unreport of Mr. King to the directors, dated Feb. 10, 1873, on the and future prospects of the mine, was printed and sent to each reh; this valuable document is full of information, both for preeach and the prospects of the mine, was printed and sent to ea

re in the history of American mining that so valuable a reserve has with such insignificant work, within such small compass, or so near with such insignificant work, within such small compass, or so near lat it is only a small portion of an immense deposit seems all but in, the value, therefore, of your property is no longer problematical, of for at least several years ahead. "Recont explorations go far funion here expressed by Mr. King. After much delay, during which aid do very little profitable work, and were obliged to keep in their estaff, the trial commenced on the 19th May, and continued until otwithstanding the overwhelming evidence produced on the part of and the sum-ring up of the judge, the jury could not agree, and d, leaving both parties at liberty to try the matter again.

Jure Mr. Corrigan effected a settlement with the Eureka Company the Look-Out, for which they had a United States patent for houghthed infectors had been advised by connsel from the commence-was on their side, and that ultimately success would be theirs, eight that by this arrangement all further uncertainty, litigation, loss of time would be avoided, willingly approved of this settlement.

istics was on their side, and that ultimately success would be theirs, esceing that by this arrangement all further uncertainty, thigation, and loss of time would be avoided, willingly approved of this settlement, our maintain the shareholders by circular, June 11, 1873. At the crain vertical boundary lines were agreed upon between the two comercia vertical boundary lines were agreed upon between the two comercia vertical boundary lines were agreed upon between the two comercia vertical boundary lines were agreed upon between the two comercia vertical vertical boundary lines were agreed upon between the two comercial vertical vertical

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abled weekly returns has been fully borne out by the monthly ac

cabled weekly returns has been fully borne out by the monthly accounts, these in most instances being more than the estimates by cable. It is also very satisfactory to observe that while Mr. Clarence King based his estimate of the value of the \$7,000 tons of ore in reserve on the assumption that it would average \$40 to the ton, the actual average since March has been \$52.

The attention of the board has been especially directed to the means of effecting a reduction in the present working expenses, a large proportion of which is due to the price of fuel, the cost of transit, the refining expenses, and commission upon the sale of buillion. No great reduction in the cost of fuel can be effected till the projected railway from Elcho, or some other station on the Central Pacific Railway, is constructed to Eureka; such a branch line would bring in charcoal from a much wider area, at a reduced rate, and probably open up a supply of coal to supersede the use of charcoal. With the railway the saving in freight would be very considerable, and it will be advisable for the company to promote such a line by all the means within the scope of their power—the immediate saving, however, of expenses will be confined to improvements in smelting, and realising the bullion, refining, and perhaps by laying down a transway from the mine to the reduction works. works.

MELLANEAR MINING COMPANY.

The adjourned general meeting of shareholders was held at the London Tavern, Bishopsgate-street, on Tuesday,
Mr. RUDGE in the chair.

The Secretary read the notice convening the meeting, and the subjoined report of the committee of investigation was submitted.

The Secretary read the notice convening the meeting, and the subjoined report of the committee of investigation was submitted. The Charrman thought it necessary before the report was read to remark with regard to the constitution of the committee that Mr. Onslow was the holder of 50 shares, Mr. MacEwen held but six shares, though he had held a larger number, and Mr. Harris neither was nor ever had been a shareholder.

When the members of the committee agreed to serve on it they did so on the understanding and in the belief that "the affairs of the company," to which the resolution passed on Oct. 25 referred, were not the affairs of the company generally from the commencement of its existence, but the particular affairs of the company, as existing in the month of July and August this year, and thecircumstances under which the working of the mine was suspended in the latter month. The committee found that in the month of July, 1573, the company was in debt to, and more or less pressed by, divers creditors, to whom they owed sums of money amounting in the aggregate to 6000\(^2\), and upwards.

The position of matters at this time, so far as the working of the mine was concerned, appeared to the committee to be this:—The old part of the mine had been drained, and being dry, was being worked, and large quantities of copper ores were being obtained from it. The sinking of the shaft known as Gundry's shaft was being proceeded with. The committee were not able to ascertain what the actual expenses per month of this portion of the workings were, or to separate them from the total working expenses of the mine. In the total expenditure of the mine for the six months ending June 30, 1873, was included a considerable sum spent by the company on the new engine house and other necessary works of a permanent character connected therewith, and in putting up the new engine. On July 30, 1873, Mr. Rogress the captain of the mine, and the pressing on of the working sto decrease the cause of some delay in the meeting of the board. O

which was attended by Messes. Nicholas, Gundry, Ross, and Howard. There are no minutes of what took place, and the committee had no definite in ormation afforded them of what did take place at that meeting. It, however, appeared to the committee to be certain that no formal resolutions were passed, and probable that no definite conclusions were arrived at.

On Aug. 21 Messes. Rogres and Moyle write that they "have suspended all operations in the old part of the mine, neighbor that they have suspended all operations in the old part of the mine, including the stoppage of the engines, the pitwork, &c., being put in good order, so that we do not anticipate any difficulty in draining the mine again whenever it may be decided to do so. Gundry's shaft is being sunk with a full pare of men as fast as possible." The committee were not able to ascertain that any official direction emanating from the board of directors was given to Messes. Rogers and Moyle to close the mine, or even to ascertain what the actual authority was on which Messes. Rogers and Moyle acted when they suspended operations, or by whom it was given. At the general meeting of the company, held on Aug. 25, the fact that it in do been closed, and that it had been closed by order of the board of directors, was stated to the shareholders, and they were asked to approve of that which the directors had done.

It appeared to the committee to be clear that the expense of the works at the mine for the six months ending June 29, 1873, very largely exceeded the value of the copper sold during that period. It appears, however, to them to be probable that the expenses incurred during July were nearly, if not quite, covered by the value of the ore gotten in that month. The committee are, therefore, of opinion that (assuming what seems to the committee to be far from provel—that in the mist of the pseuming which they will always the solution of the company of the continuer of the solution of the company of the shareholders of the company had a hole as to whether they CHAIRMAN explained that the reason the committee was ap-

The CHAIRMAN explained that the reason the committee was appointed was because it was thought that the directors were not right in closing the mine as they had done, but really no other course was open to them. They received notice from Mesers. Harvey on Ang. 12, stating that they would not give the mine any more credit, and subsequently a meeting of the board was held, at which Mesers. Ross, Howard, Gundry, and Nicholas were present, at which the position of the company was fully considered, and the steps to be taken decided upon. They were thengetting a good supply of ore, but as they were only obtaining 24.9s. per ton for it instead of 44.9s. as formerly, and as the price of coal was excessive, it was useless to continue. On Ang. 28 a general meeting of shareholders must be assumed to have tacity approved of the ourse them adopted. Mr. MATHEW GREENE enquired how it was that Mr. Harris, not being a shareholder, was placed upon the committee of investigation?

The CHAIRMAN explained that it was through misapprehension. The gentleman signed "J. Harris" in the book, and as every shareholder was not personally known to the officers of the company, it was assumed that it was 7 Josiah Harris" a shareholder, especially as the gentleman was foremost in having Mr. Waddington turned out of the room because he did not held shares. It subsequently transpired, however, that it was not "Josiah Harris," but "John Harris," his brother, who was not a shareholder at all.

Mr. Oxslow considered the status of the members of the committee was at the present time of little moment.

or 13 shareholder at al.

Mr. ONSLOW considered the status of the members of the committee was at the present time of little moment. The question involved, and that which the committee had to report upon, was whether the mine had been bone fide closed.

At the time of the suspension the best ore appeared to be approachable, and the mine was drained, in full work, and dry. The newengine was down, and assisting the old one, and it certainly appeared that operations might have been continued until a better time arrived. Everything, however, seemed to depend upon the relations between the company and Messrs. Harvey: he would, therefore, like to know the arrangement come to between Mr. Gundry and Messrs. Harvey, and referred to in the telegram.

Mr. GUNDRY stated that he met Messrs. Harvey at Hayle, and the result of the interview was that they considered that as they could not carry on the mine at a profit at the then prices (they were then paying 25s, per ton for coal, and using 10 or 12 tons per day), and as they had given as much credit as they saw security for at the mine, the mine ought to be suspended, except the sinking of Gundry's shaft, or else more capital raised; he believed that by the course adopted the ore would hereafter be got away at 10s. in the 1/L less. The suspension of the mine really emanated from the manager himself, for he had before stated that they could not go on through the winter with existing prices.

Mr. MATTHEW GREENE had had a conversation with Mr. Rawlings, of Messrs. Harvey and Co., and he believed that they could not have suspended operations at a better moment.

Harvey and Co., and he believed that they could not have suspended operations at a better moment.

The CHARIMAN was much obliged to Mr. Onslow for his statement that he had no hostility towards the directors, and that the committee had found that nothing unjustifiable had been done by the directors. The fact was that Messrs. Harvey urged upon them that as the company owed them 6000%, and was a limited company, they did not feel justified in going further—a view which he considered it was quite proper for Messrs. Harvey to take. He thought that at present there

ras but one thing for them to do: he should, therefore, propose to wind up the ompany, and if the resolution were not passed he would suggest that the working

was but one thing for them to do: he should, therefore, propose to wind up the company, and if the resolution were not passed he would suggest that the working of the mine should be continued by the members of the committee, and the directors would tender their resignation.

Mr. O'SLOW would have pleasure in seconding the resolution, but hoped that the management would continue with the present directors. He would like to learn from the Chairman whether either of the schemes brought before them had been considered.—The Chairman whether either of the schemes brought before them had been considered. The Chairman whether either of the schemes brought before them had been considered. The Chairman whether either of the schemes brought before them had been considered. The Chairman which is considered to the present of the scheme of hostility towards the directors, he fully endorsed all that he had said. If at the previous meeting anything which he had said might have appeared to impugn the integrity and honour of the directors, he was glad of the present amount in the mine that he had naturally felt very sore upon the matter until it had been investigated. Another thing was that he felt Messes. He matter until it had been investigated. Another thing was that he felt Messes, the were quite right, under the circumstances which had since been ascertained by the committee, in refusing to give further credit, and he would, therefore, exomeration to wind-up, he could only say that it would have been more satisfactory if it had been combined with a scheme for re-construction; and for his own part he would feel obliged if the directors would do them the favour of maturing a scheme for earrying on the mine.—The Chairstan said that that was a matter upon which he could only say that it would have been more satisfactory if it had been combined with a scheme for re-construction; and for his own part he would feel obliged if the directors would do them the favour of maturing a scheme for earrying on the mine.—The Chairstan said t

EXCELSIOR MINING COMPANY.

A meeting of adventurers in this mine was held in the account-

A meeting of adventurers in this mine was held in the accountmouse, on Nov. 7,—Mr. Adam Murray in the chair.

The accounts showed a balance of assets over liabilities of 1291. The following report was then read:—
Nov. 6.—In handing you my report for the general meeting, to be held to-morrow, there to held to morrow, there to held to morrow and the state of the various work that has been accomplished haring the last 10 months, together with the future prospects. The south add the last 10 months, together with the future prospects. The south add they are been extended in oblique direction 28 fms. 2 few 8 in., and within the last of full 13½ feet wide, composed of capel, psach, quartz, &c., spotted with mundic, sontaining a little tin, but not enough to value. The granite both north and south of the lote is of a favourable character, such as tin-bearing lodes are generally found in. The air shaft has recently been communicate to this level, which has afforded good ventilation for future operations. A level has been taken up and driven 21 fms., and communicated with Murray's shaft; by so doing it has afforded good ventilation for future operations. The sinking of the above shaft was continued in the lode for 2 fms. 4 ft.; in the present bottom the lode is disordered by patches of granite. The main part, from all appearances, is gone off north of the shaft, which is letting out large streams of water, so much that we could not keep it under control with horse-whim barrels. The holing the level above referred to has rendered all difficulty regarding the water at an end, with much better facility for taking way the lode than heretofore. Hitchins's engine shaft is down 13 fms. 3 fect from surface, in good killas ground, with necessary dividings and casing, with footway fixed, and a cross-cut driven towards the lode 2 fms. 4 feet, leaving about 3 fms. more to drive to intersect it; the influx of wat x being so great we were compelled to suspend it for the time. We are making the necessary arrangement for developing this

orge Rickard.
The Chairman, in moving that they be passed, stated that he con-

The CHAIRMAN, in moving that they be passed, stated that he considered quite enough had been done to prove the value of the sett. The mine, moreover, had been inspected by many authorities, among them Mr. J. Kendall, Capt. White, of Penstruthal, and Capt. Gifford, all of whom were of opinion that the sett only wanted to be vigorously prosecuted to ensure full success.

Mr. J. LITLE, of London, who had that day visited the mine for the first time, said he was exceedingly pleased with what he had seen, more especially when he took into consideration the geological situation of the ground, being at the foot of a granite hill, on its junction with the killas.

Col. Comys repeated his continued confidence in the prospects of the undertaking. The necenting unanimously expressed the opinion that the undertaking should be converted into a limited liability company, not only to determine the liability of the shareholders, but also more vigorously to prosecute the concern, and it was, therefore, resolved, in consequence of its being the wish of the majority of the shareholders, to convene a meeting in London, for the purpose of reconstructing the company under the provisions of the Companies Acts.

Messrs. Murray, Comyn, and Hitchins were elected a committee.

A vote of thanks to the Chairman terminated the proceedings.

TAMAR VALLEY SILVER-LEAD MINING COMPANY.

A meeting of adventurers in this mine was held in the account-

TAMAR VALLEY SILVER-LEAD MINING COMPANY.

A meeting of adventurers in this mine was held in the accounthouse of this well-appointed and promising mine on Friday, Nov. 7,

Mr. MATTHEW GREENE in the chair.

The balance-sheet showed a balance of liabilities over assets of 518/, 198, 2\frac{1}{2}\dlots, ore having been sold to the value of 455/, 128, 4d.

The following report from Capt. Goldsworthy was read:—

Nov. 6.—Weston's engine-shaft is now completed to the 77: the lode in the bottom of the shaft is 2 ft. wide, composed of quartz, horn-spar, mundic, &c., of a favourable description for the production of silver-lead ore. The ground has been hard, and mixed with spar, and the shaft is now passing through the disordered ground. At about this depth the mines to the south passed through similar beds of disordered strata as are now in Weston's shaft. Judging from this, we have favourable prospects in sinking a few fathoms deeper and extending levels north and south. The shaft is also cased and divided to the 67, plat cut, &c. The tribute ground continues with but little change in silver-lead and futor-spar. We are preparing a cargo of best fluor-spar, and have a parcel of silver-lead prepared for the market. The pitwork and machinery are in good condition, and working well. For the future development of the mine the sinking of the shaft should be continued some fathoms deeper, so as to get through the disordered ground, as there are evidences of the change in the bottom of the shaft, and as soon as properly through the ends should be extended north and south, where most favourable results may be expected, as in the mines to the south.—Jon's Goldsworthy.

The CHAIRMAN moved the adoption of the balance-sheet and report, which was carried. The mine, he observed, had reached the depth of 80 fms. under adit, which was the point at which the Tamar Silver-Lead Mines, which had been so productive, had generally commenced to make their rishes; and the appearance of the lode was such as to give them every reason to believe t

The following gentlemen were elected the committee, to act until the next general meeting—Messrs. Wm. Devine, J. B. Freeman, and J. H. Hitchins. A call of 2s. 6d. per share was made.

A letter was read from Mr. Weston, who was unable to be present, expressing a wish that the company should be converted from a cost-book into a limited liability company, and it was unanimously resolved that, in accordance with the wishes of the majority of the shareholders, for the more vigorous prosecution of the mine, and also for placing the funancial condition of the company on a more satisfactory basis, and avoiding frequent calls, that the company be registered under the Joint-Stock Acts, and that a meeting be held in London to carry out that object.

The proceeding then terminated.

EAST POOL MINING COMPANY.

At a meeting of adventurers, held at the mine on Monday, the accounts for August and September showing a profit of 5214, 18, 10d,—reducing the previous debit balance to 104. 7s. 5d.—were read and examined, and together with the report of the manager and agents, on the motion of Mr. James Dennis (the Chairman), seconded by Mr. Thomas Andrew, were allowed and passed, and the balance carried to the credit of next account. The following report was

carried to the credit of next account. The following report was read to the meeting:

Nov. 10.—The 189 fm. level is driven east of engine-shaft22 fathoms, and is worth for tin 300, per fm. We are now stoping at this point for the purpose of draining it, as we purpose sinking a winze from the 170 here, and we hope to lay open a piece of profituble ground. The 189 is driven 25 fms. west of the engine-shaft, and is worth for tin 220, per fm. There are three stopes in the back of this level, worth 20, per fn. each stope. The 170 is driven 17 fms west of the cross-sourse, and is worth 100, per fathom. There are four stopes in the back of this level, worth 20, per fnm each stope. The 160 is driven 80 sunth of Pryce's lode 21 fms. It is still in killas, and ground hard. The winze in the bottom of this level is 11 fms. west of the cross-course, and down 10 fms.; it is worth 30, per fathom. The k-hope to communicate it to the 170 next month.—Engine Lode: A stope in the bottom of the 160, east of Dennis's cross-cut, worth 24, per fathom each stope. A stope in the bottom of the 140, east of engine-shaft, is worth 182, per fathom——South Lode: A stope in the back of the 150, east of the cross-course, is worth for tin and copper 200, per fathom. The 140 is driven 12 fms. west of the cross-course, and is worth 81. per fathom. A stope in the back of the 130 is worth 120, per fathom. The 140 is driven 120 fms. west of the cross-course, and is worth 81. per fathom. A stope in the back of the 130 is worth 130, per fathom. A stope in the back of the 130 is worth 130, per fathom. The 140 is driven 120 fms. west of the worth 150, per fathom. A stope in the back of the 130 is worth 130, per fathom. The 140 is driven 120 fms. worth 150, per fathom. A stope in the back of the 130 is worth 130, per fathom. The 140 is driven 120 fms. west of the worth 150, per fathom.

The 130 is driven 70 fms. east of the western cross-course, and is worth for tin and copper 16% per fathom. There are two stopes in the bottom of this level worth 22% per fathom each stope. The winze in the bottom of the 140 is down about 3 fms., and is worth for tin and copper 25% per fathom.—W. S. Garby (Manager), John Maynard, John Mosking.

22. per fathom each stope. The winze in the bottom of the 140 is down about 3 fms., and is worth for tin and copper 25. per fathom.—W. S. Gariy (Manager), John Maynard, John Hosking.

The CHAIRMAN said that they were now in just the same position as they were before the accident they experienced some time since, and he hoped they would go on with something like cheerfulness with the beginning of 1874. He was happy to state that the water was now in fork to the bottom of the mine. He occupied the chair that day with a great amount of pleasure, even more than he ever felt before. Capt. Garoy and himself had worked out a 21 years lease, and they had a new one preparing. When they took possession of the mine it was one of the poorest in the county, and was nothing but skin and bone. When he purchased the interest of Lady Basset, he came to their manager of the mine, and asked him what he intended doing. He did not appear to know what to do, and he (Mr. Dennis) proposed that the mine should be sunk deeper, when the manager said that was utterly useless. However, they had sunk, and, although it was a difficult job, it was there that they had found their mine. The trouble and difficulties they had had during the past two years were something immense—what with the water, and the breakage in their engine, they had had a critical time of it. But he was happy to say that they had now, by dint of exertion, wiped off the debt brought from the last account, the water was in fork, and, altogether, the mine was never looking better, nor had they ever had a better report. (Hear, hear.) The richest part of the mine was, undoubtedly, in the bottom, but they were, to use a rather strange expression, sinking upwards. From the 180 upwards they had found a lode they had never expected. With all their misfortunes, they were still living, and were looking well, and although things were at present looking quiet, he trusted that they had now expected. With all their misfortunes, they were stilliving, and were looking well, and although t

NEWFOUNDLAND MINING COMPANY.

A general meeting of shareholders was held at the London Tavern, on Tuesday,—Sir ALEXANDER MALET in the chair.

Mr. N. M. BYERS (the secretary) read the notice convening the

on Tuesday,—Sir ALEXANDER MALET in the cuair.

Mr. N. M. BYERS (the secretary) read the notice convening the meeting.

The report of the directors stated that the experience of every day satisfies them, more and more, of the great value of the property of Li Manche Mine, which, in their belief, only wants a short time longer to develope to make it pay a handsome dividend. The winter which followed the completion of the purchase of the property was unexampled in severity, and it was not until January and April that the manager and captain of the mines arrived, so that practically nothing was done until May. Owing to the great interest which the Newfoundland Land Company are taking, by exploration, in the development of the mineral resources of their extensive property in the colony, and also to the opening of some other lead, copper, and nickel mines, by private individuals, there has been an increased demand for, and consequently a difficulty in obtaining, skilled mining labour. A favourable opportunity, however, recently occurred for sending miners to La Manche, of which the directors did not hesitate to avail themselves. On Sept. 8, 20 miners left Queenstown for St. John's, and arrived at the mine on the 20th, and on October 8 20 more were forwarded per Austrian, Allan line of steamers, making 40 in all. These miners, previous to embarkation, entered into a legal agreement to serve the company for 12 months, at wages similar to those paid to the native miners. A cargo of ore reached Swansea from La Manche, at the latter end of August, which realised \$122.11s, 5d.; and the average value of the ore was \$13.1.0s, per ton. And the following particulars received from the agents, Mesars. Richardson and Co., of Swansea, will show the extraordinary richness of the lead: -67 tons produces \$132.21s, 5d.; and the average value of the ore was \$13.1.0s, per ton. Produces \$132.21s, 5d.; and the saredy value of the ore was \$15.0s, silver; 13 tons produces \$15.25 errors. Lead, and \$15.0s. silver; 10 tons produces \$15.25 erro

position to ship another eargo, and the shareholders may rely that no exertion shall be spared by them to obtain this desirable result.

The CHAIRMAN said that unless some extraordinary reports connected with this mine had been put in circulation he should have addressed very few observations to this meeting; but, as it was, not only had the extent of the territory been called into question, but it had been doubted whether the directors had fulfilled the main conditions put forth in the prospectus—that they would not complete the purchase of the property until inspected and reported upon. He thought it necessary to advert to both those points. As to the territorial possessions of the mine, they had only to refer to the solicitor who had executed the lease, and to the map appended to the prospectus just issued, showing the extent and position of the mine. The Hon. Mr. Harvey, the gentleman who inspected the property, was the manager of the Tilt Cove Mines, and his report was very satisfactory and confirmatory of the statements set forth in the prospectus as to the value of the mine, as to the prospects held out for the future—in short, there was no point which Mr. Harvey had touched upon which was not satisfactory to the directors. They had had constantly fortnightly reports from Capt. Curnow, a well-experienced Cornish captain, who had confirmed the reports made by Dr. Webster as to the produce of the mines being from 20 to 35 cwts, per fathom, and of the highest quality. Dr. Webster took out with him a qualified and experienced gentleman, Mr. Butterfield, whose report had been laid before the shareholders; and it was satisfactory that his analysis made by Messrs. Richardson and Co., whop purchased the first parcel of or: brought to England. Some discrepancy had been found in the cuantity purchased—it was supposed to amount to 250 tons, but when the cargo came to be discharged at Swansea it was found not to exceed 227½ tons. The difference could not yet be fully accounted for. There was an interregnum between t position to ship another cargo, and the shareholders may be the best be spared by them to obtain this desirable result.

The CHAIRMAN said that unless some extraordinary reports conof their coleagues, whose resources and means of information the boardhadalwayshad great reliance upon, suggested that Irish miners should be sent out; 20 had been sent out, and were now working on the mine, and these had been supplemented by another 20, and it was to be hoped that room enough would be found for them, although it was not quite certain such would be the case until the new machinery which had been sent out had been erected. It was important the shareholders should not forget that their property was its total in a Parisib colour within too days said of England ander situated in a British colony within ten days sail of England, under British law, and that there was telegraphic connection with the island. The mines were on the sea-shore, and the company had its own port, the mine were of the seasoner, and the company had to own port, the mine having its own communication with the wharf by means of a tramway; in short, the property possessed advantages very rarely found in enterprises of this kind. The mine was described by all who had seen it as a most valuable one, and as it returned ore of such rich quality at 20 fathoms deep in such a geological formation, no reasonable doubt can be entertained that it will impresse in richness in death. At present they were driving only. asterly inland, but when a sufficient depth had been reached there was a large attendance.

Where most satisfactory results were anticipated, it being known that there was a large attendance in the state of the third of the present them driving under the sea level, where most satisfactory results were anticipated, it being known that as in Botallack and elsewhere, enormous mineral wealth had been explored under precisely similar conditions. It so happens that as in Botallack and elsewhere, enormous mineral wealth had been explored under precisely similar conditions. It so happens that there was no dead work in driving the levels, profitable work being produced, that in the main level yielding 25 to 35 cet, of ore per rathom, which was a very favourable feature. Their waters, now was, however, employed not only in pumping, but indressing the ores, and it was very seldom they required the steam-engine, and when they did it was worked at a very reasonable rate, for the coal, coming from Nox Sectia, debarked at 16s., although it was now in course of erection. As to the remuneration of the discussion of the common control of the control of the present of the part of the present of the part of the present of

sanction. He then moved that the report and balance-sheet be received and adopted. ——Mr. J. C. Deane seconded the proposition. Mr. Walker asked if a quotation in the Official List had been applied for? The Chairman said the question should be taken into consideration. Mr. Sucress said he took his shares relying upon the statements put forth in the prospectus, but he was sorry to say that it suggested that which was false, and suppressed that which was true. He had placed the necessary papers in the tands of his solicitors, and requested them to apply to the board to take his name off the register, and return the money he had subscribed, otherwise he would have to appeal to the Courts of Law. He then left the room.
Mr. Thonnyow did not think the question worth discussing. It was the usual threat when a speculator found he could not sell his shares at a premium.
The Chairman thought that Mr. Surtees might have had the common courtesy to wait to hear a reply.
The motion adopting the report and balance-sheet was received and adopted. Lieut. Col. Feilden and Mr. Percy Mitford were re-elected directors.
Mr. Sillifant was re-appointed auditor.
A vote of thanks to the Chairman and directors closed the proceedings.

SOUTH WHEAL FRANCES MINING COMPANY.

The three-monthly meeting of shareholders was held at the mine, on Tuesday, Mr. John Farren Penrose (the purser) presiding. The accounts showed a debit balance of 182/.

on Tuesday, Mr. JOHN FARREN PENROSE (the purser) presiding. The accounts showed a debit balance of 1821.

The CHAIRMAN thought it only right to inform the shareholders that he had made a provision at the last account for the first instalment due to West Frances for encroachments, but owing to the tardiness of legal operations this had not been done, and consequently they had been bound to credit the full amount of call then made in the present accounts; the first instalment of 437. for encroachments would, however, be due in a week or two, and to meet this it was resolved that a call of 30s. per share should be now made, payable forthwith. One share was declared to be forfeited, it having been decided at the last meeting that all shares on which calls were owing should be forfeited.

The manager and agents, Capts. Abraham James, J. James, and J. Opie, reported that in Marriott's engine shaft the 144 cross cut was being driven south from the north lode on Marriott's flookan, with a view of intersecting the lodes known to be in that direction. The rock was favourable for progress, and congenial for the production of mineral. Pasce's shaft was about 195 fathoms below the 154 fm. level, and was being sunk as quickly as possible. The lode was producing a little tin, but not enough to value. The ground was very favourable, and indications good. The lode has taken a more perpendicular turn, and no doubt at a deeper level would form a junction which would be the means of erirching West Basset great tin lode, which was the main object in sinking this shaft. The flat-rods were almost complete from Marriott's engine-shaft to the bottom of Pascoc's shaft. This had naturally given a great deal of labour, and entailed a large expenditure, but everything was now in a forward state, and in readiness to work when required. On Saturday last West Wheal Basset was inspected for the benefit of South Wheal Frances, and the managers were very happy to say that the prospects in the bottom of that mine were of a very cheering and encou

is lotes. The CHAIBMAN read a report from a captain specially engaged by the largest are holder in the mine, in which the statements of the agents were corroborated, at the coming success of the mine looked upon as a certainty. The next matter had to bring before the meeting was the subject of the call, and 30s, per share, was glad to say, would be quite enough. The accounts had been brought up as ose as they possibly could be, and were it not for the eneroachment claims he

he was glad to say, would be quite enough. The accounts had been brought up as close as they possibly could be, and were it not for the encroachment claims he should only have to ask for 10s.

Mr. Laws: The meeting was, doubtless, aware that a very considerable interest in the mine was held in London. He that day represented a fourth of the shares held in the concern, and he attended there to ask them to consent to the appointment of a reference office in London, where they might be furnished with a weekly or fortnightly report and abstract from the innonthly cost, in order that they might see what they were doing. They had come into that mine not merely as speculators, but to legitimately develope its resources, and he thought it fair, therefore, that, holding as they did that large interest, they should be furnished from time to time reports of its progress merely for their own guidance. They had no wish to interfere with the management, because he was convinced that everything that could be done had been done for their interest. The time of their puries was well-taken up, so that he should be sorry to be always asking for information, which would, perhaps, create a voluminous correspondence. He had a very good opinion of the future of South Frances, and were it not for the rascall that they would have long since been paying dividends exceeding in amount that they would have long since been paying dividends exceeding in amount the value of calls now being made. If they had acted like honest men, those people would long ago have come forward and reimbursed them. (Hear, hear.) It was a source of some gratification to them to find only a 30s, call made to-day, for when he carm down he certainly did not think that their accounts were in an altogether unsatifactory condition, and he ventured to say, from his knowledge of mining, that there were very few mines in Cornwall where a more clear, concise, or truthful statement of the accounts was submitted to the shareholders than this. A report was placed in his hands

sould only say from time to time that they were looking as well as on the previous seasion.

Mr. Laws said the London interest wanted to know how the mine was looking row time to time, and what its financial prespects were.

The CRAIMAN would not mind the trouble of communicating with Mr. Laws n the least, but he might tell him now that their cost was not likely to alter nucle or their prospects to alter much; and, those being the only two points, it was a question whether it was desirable to make any change.

Capt. Jawses, as far as he was individually concerned, would not have any objection to sending up a report of the mine once a munth; but he did not think it would be any benefit to forward them oftener, for the mine was not of such a changeable character. There was nothing to conceal, and every plan, every document, was open to the inspection of every shareholder on any day.

Mr. THOMAS could see no objection to supplying reports to the London shareholders, but on the broader question of whether they would establish a branch London office, he could not say he was prepared to vote for it.

It was then resolved that periodical reports should be furnished, and the business of the meeting terminated.

WEST WHEAL SETON MINING COMPANY.

This mine (near Camborne) has been in operation for about 30 years. It has been worked chiefly for copper, plentiful deposits of which have been found, and during the past few years tin has also been worked. It is thought that tin will, as is usual in mines in this part worked. It is thought that tin will, as is usual in mines in this part of the country, be found in large quantities in the deeper parts of the mine. Somewhat about 230,000% has been paid in dividends, but for the past 12 months things appear to have taken a turn, and instead of paying dividends it has been found necessary to make calls. These have amounted to 7%, 2%, and 1% per 400th share, and some of the new shareholders in the mine consider this to be very heavy. Seeing the amount of returns of ore, they think that there must be something wrong in the present management, and as the result of that, a special meeting is called to consider the advisability or otherwise of changing it. The report presented was a good one, and the accounts showed a small profit on

answer to a request for a reduction.—It was then resolved, on the proposal of Markets that Mr. T. Pryor take the chair, which that gentleman relucating to Mr. Pryor then proceeded to read the accounts, which were as follows: the costs for three months, 3783/, 0s. 2d.; merchants bills, 722 as follows: the costs for three months, 3783/, 0s. 2d.; merchants bills, 722 as follows: the dues, 2794. 4s. 9d.; income tax and way rate, 605. 5s. 4d.; interest, bankets to the end of June, 2904. 3s. 1d.: total, 6404/. 1s. 9d. The credit side that to the end of June, 2904. 3s. 1d.: total, 6404/. 1s. 9d. The credit side that to the end of June, 2904. 3s. 1d.: total, 6404/. 1s. 9d. The credit side that copper ore sold, 3124/. 2s. 3d.; arsnein; 1844. 4s. 6d; tim. 2f. 5d., 5d.; said side that side that the side of the copper ore sold, 3124/. 2s. 3d.; call of 16. per share, made at the last meeting, 400/. 6s. 5d.; said side that the copper ore sold, and the copper of the copper ore sold, 3184/. 2s. 3d.; call of 16. per share, made at the last meeting, 400/. 6s. 5d.; said chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills, 11/. 8s.; leaving a balance against the mine of 172/. identical chants' bills were delived.

The accounts were adopted on the motion of Mr. Hilderley's blaft; is 4 feet wide

sent. The merchants' bills were also lower, and he thought they we more tin next time than they had done.

Several shareholders considered that no call should be made at this m. Mr. MATTHEWS, in reply to a question, said that the amount for coatend of December.

more tin next time than they had done.

Several shareholders considered that no call should be made at this media, Mr. MATTHEWS, in reply to a question, said that the amount for coal was end of December.

Mr. CARTER thought that there was another matter which ought to be been the adventurers. He had always respected the present agents and main but there had existed a strong feeding as to the management of the mine for time past amongst a large number of new adventurers. Under the mine for time past amongst a large number of new adventurers. Under the mine for the prought the question of management before the meeting. Perhaps they course to adopt would be to adjourn the meeting for a formight in order the matter might be well considered, out of fairness to the agents as well as the sholders. They could also at the adjourned meeting consider the question of the from the commencement of the year. South Crofty and other mines had had due to reduced from May last, and he did not see why they could not get the concession.—The Chardan's believed Mr. Basset would re-consider the maje it was properly brought under his notice. He had had occasion more than a communicate with that gentleman, who had always shown in a very manner than the was fully alive to the present depression in mining circles, as had a strong desire to take his share of the burdens which had been thrown the adventurers as the result of that depression. He was in every respect also minded landlord, and as such was an honour to the county of Cornwall. (He Capt. Barn said that during the past three months they had paid part of dues at 1.24th, and part at 1.16th, which Capt. Teague did not think at all fait the part of the lords. Capt. Bart further stated that the concession had been from Aug. 25, and it was thus stated in the letter from Mr. Cartwight—in permanently reduced to 1.18th, and copper and in to 1.25th, until such times from Aug. 25, and it was thus stated in the letter from Mr. Cartwight—in permanently reduced to 1.18th, and copper and in to 1

'For remainder of Meetings see to-day's Journal.}

ALLEGED INTIMIDATION OF WORKMEN AT LAXEY THE GREAT LAXEY MINING COMPANY P. EDWARD KEWIN AND

ALLEGED INTIMIDATION OF WORKMEN AT LAXEX.

THE GREAT LAXEY MINING COMPANY P. EDWARD KEWIN AND JOIN KEIN.

At the Deernster's Court, Ramsey, on Nov. 4. Edward Kewin and John life two Laxey miners, were brought before his Honor Deemster Stephen, under at the instance of the Great Laxey Mining Company (Limited), to show cases they should not be imprisoned until they entered into bonds to return to the sent of the company and fulfil the monthly contract or bargain, as it is berned, with the should not be imprisoned until they entered into bonds to return to the sent of the company and fulfil the monthly contract or bargain, as it is berned, with the should not be imprisoned until they entered into bonds to return to the sent of the company and fulfil the monthly contract or bargain, as it is berned, with the state of the contract, and the past of intimidation to which they were subjected in consequence of the symmothese regions or intimidation to which they were subjected in consequence of the symmothese accept, they were in bodily fear of their lives, and dare not go on with theirs accept, they were sworn and examined by the Deemster himself at great lengths their evidence fully bore out their defence. The evidence was as follows:—So John Kelly sworn: We commenced our work, according to our contract, a Thursday. On the Saturday morning following at the level mouth, before either mine, a note was put into my hand, while I read and showed to Kewin the mine, a note was put into my hand, while I read and showed to Kewin the mine, a note was put into my hand, while I read and showed to Kewin the mine, a note was put into my hand, while I read and showed to Kewin the mine, a note was put into my hand, while I read and showed to Kewin the mine, a note was put into my hand, while I read and showed to Kewin the mine, and was as follows:—So You are hereby requested to attend a general meeting to be held in the Oil Sab House in Laxey Glon, for the purpose of ascertaining the reason why you acred the bargain refused by those

THE NIAGARA DIRECT AND DOUBLE-ACTING PLUNGER POWER

Nov

pump is more easily transported into mining districts, and even when it pump is more easily transported into mining districts, and even when it even desirable to send the pump all put together and ready for work, the ered desirable to send the pump all put together and relative pump and to rinjured, confer upon this mode of construction a supe-been when we have the pump and the p

MINES, MINERS, AND MINERALS.

ly an interesting lecture delivered at the Penzance Institute, by In an interesting lecture delivered at the Penzance Institute, by In T. CORNISH, the lecturer remarked that he did not propose to the T. CORNISH, the lecturer remarked that he did not propose to the T. CORNISH, the lecturer remarked that he did not propose to the T. CORNISH, the lecture on minerals. Mineralogy was in itself an extensive subject, iners, and minerals. Mineralogy was in itself an extensive subject, iners, and mineself qualified) would be simply impossible. The flee comprehended the unorganised mass of the globe, including since day, and even epsom salts. In its simple definition it was the increase dealing with minerals dug from mines, and he would confine remarks to some of the common forms of metallic minerals. The remarks to some of the common forms of metallic minerals. The result in the eastern part of the county, and also at the Marsh, on the red in the eastern part of the county, and also at the Marsh, on the left in the eastern part of the county, and also at the Marsh, on the left in the eastern part of the county, and also at the Marsh, on the left in the eastern part of the county, and also at the Marsh, on the left in the eastern part of the county, and also at the Marsh, on the last entury, sufficient to also a mineral sufficient to the aring, which had been preserved to the present day. White the aring, which had been preserved to the present day. White all had been produced at Stable Hobba, and the lecturer reserved to Mr. Emerson's efforts in its production. The presence of did no ornish quartz was shown by a sample. The great disiminity of specimens containing the same metal was pointed out, and its produced and the lecturer reasons are greater than the lecturer reasons are greater than the lecturer reasons on the table. There was copper proand above production. The presence of the first of the fi all of a lode, the underlie, and other features in its formation were scribed, some of which were valueless for mineral. A lode may list or 20ft, wide, or it may be of very small proportions (samples the latter being shown); it had also the peculiarity of being very small. The dip of the lode was also described. The working of sine was shown by sections of Wheal Kitty, Wheal Margaret, and ordence (the last of which was kindly lent by Mr. S. Higgs, the rest). The shafts, adits, levels, their uses and how they were ked were clearly shown, together with the important operation sinking winzes. The workings beneath the sea at Providence i Botallack, and the dangers to be avoided, were spoken of. How metal becomes deposited in a lode is a difficult matter to solve, taken it there is much speculation.

and Botallack, and the dangers to be avoided, were spoken of. How he metal becomes deposited in a lode is a difficult matter to solve, but about it there is much speculation.

The metals here (tin and copper) were found in the primary rocks, and there was no reason for thinking otherwise than that the process of metallic formation was going on now. Agencies were in operation, no doubt, for the production of metal, it being instanced that the earth beneath us was in a state of motion, as was shown at Great Kork, where a granite adit had contracted. At Boscaswell there were large chasms to be seen. The extreme superincumbent present was driving out the walls laterally. Then how were these lodes being? There were two ways; one was practical and the other senimental. The first was by costeaning pits and going down to find; the second was by dowzing, the dowzer being a person, it was considered (by the believers in the process) who was specially endowed with powers for the performance of the operation. The person so fifted takes an hazel rod between his fingers, and when it dips the result of the second was by dowzing. The dowzers were considered men pecially endowed with supernatural agency. The Cornish miners was who believed in its efficacy. The dowzers were considered men pecially endowed with supernatural agency. The Cornish miners was taken many old superstitions, a belief in the presence of the pirits of the mine being one; the lecturer instancing the story of dCapt. Rutter going down a mine with a party of gentlemen, who cautioned them that whatever they did—they might dance or sing—but on no account should they swear or whistle. One of the est specimens of the genus homo, the lecturer considered, was the former of which the miner became a speculator with the admethed of taking wages by the tribute and tutwork system, by the former of which the miner became a speculator with the adwere their hours of labour (from 30 to 26) during the week; and the method of taking wages by the tribute and tutwork system, by the former of which the miner became a speculator with the adventurers. Their amusements were peculiar, amongst which was that of wrestling. They never had to run the risk of endangering their lives by fire-damp, but were exposed to the danger of being pershelmed by water, owing to the carelessness of their ancesters in not properly closing up and securing old workings. Their diseases were peculiar, and were contracted in the hot ends of the workings. At Wheal Clifford the thermometer stood at 98°, after working in which atmosphere the men lost from 6 lbs. to 8 lbs. in weight. Reference to the similarity of old Cornish mining terms to those of iron, to the laws relative to mining, and to the formation of crystals concluded the lecture.

ROCK BORING-DYNAMITE.

A number of members of the South Staffordshire and East Worgetershire Institute of Mining Engineers met at Messrs. Dixon's and June's limestone pit, at Dudley Port, to watch a series of boring aperiments with Macdermott's patent rock and coal perforator, and lise experiments with dynamite as an explosive agent. The performers was worked by Messrs. Elliott, of Birmingham, the representives of the patentees, but on account of the failure of the crill hey made no further progress in the limestone with two men than he man in the pit did single-handed with his hanner and chisel. Jessrs. Elliott confessed that the limestone was the bardest rock. the man in the pit did single-handed with his hammer and chisel. Messrs. Elliott confessed that the limestone was the hardest rock they had ever met with, and that the perforator they had with them was not equal to the work offered them. The dynamite experiments, on the other hand, were very successful, huge pieces of limestone being smashed by the simple expedient of laying a cartridge of the dynamite on the top of the rock and firing it. These experiments were conducted by Messrs. T. and Henry Johnson, of Dudley. In the evening an ordinary monthly meeting was held in Dudley—Mr. William Blakemore presiding. A discussion took place on the experiments, and it was generally agreed that the perforator was invaluable in coal, binds, grey and green rock, but that the Dudley Port limestone—which was the hardest in the kingdom—was too much for a rotating drill. Upon the dynamite experiments, Mr. Cole said it had undoubted power, and was a valuable material, but there had not been holes enough bored for him to give a decided opinion on its relative merits with other explosives. Several members paised the invention very highly, and Mr. Henry Johnson, sen, said oth the perforator and the dynamite had done good work at the Sandwell sinking. The drill with one man did 2½ inches more in 13 minutes than three men in the same time with double-handed punching. It was arranged the text have the merits with other explosives. Sandwell sinking. The drill with one man did 2½ inches more in 13 minutes than three men in the same time with double-handed punching. It was arranged that both machines should be exhibited at the next monthly meeting.—The Secretary (Mr. H. Johnson, jun.) at the next monthly meeting.—The Secretary (Mr. H. Johnson, jun.)

read a correspondence with a Mr. D. Jones, secretary to the Iron-masters' Association, on the subject of giving a prize for the best essay on the geology of the South Staffordshire coal field, with particular references to the present fault, indications, and existence of the Thick coal.—A discussion followed, but the speakers were against the Thick coal.—A discussion followed, but the speakers were against the proposal to spend money on such an essay, believing, as Mr. H. Johnson, sen., Mr. Hughes, and Mr. Spruce said, that the late Prof. Beete Jukes had done the work well years ago. In support of his argument, Mr. Henry Johnson, sen., read Prof. Ramsay's letter to the Times on the subject, which stated that a new 6-inch survey of the whole coal field was contemplated by the Government, and would be put in hand at once. Mr. Johnson combated the recent attacks made upon Jukes's survey of the district, and detailed the the numerous new sinkings that had been carried out the last ten years on the confines of the coal field, and the fact that several hundred thousand pounds had been thus spent, he thought, was quite sufficient to show the lively interest that had been taken keep the coal field alive without expending 300 to 500 guineas in a prize essay. coal field alive without expending 300 to 500 guineas in a prize essay

COLLIERY PROPRIETORS AND THEIR MEN IN STAFFORD SHIRE.

The system which has prevailed for some time at the collieries in South Staffordshire of employing a larger number of colliers than the works actually require has grown up from the necessities of the case. The workmen have systematically neglected to work full time, and have thereby driven their masters to the necessity of taking on a larger number of hands than they can each day find employment for. This system has been well understood by the men, and such arrangements have been made as secured, when they have been fairly carried out, a distribution of the whole work amongst the pit's company. So regular has been the irregularity of the colliers that the managers of large concerns have been able to calculate exactly how many men in excess of what under ordinary circums. exactly how many men in excess of what, under ordinary circumstances, would be a complete complement will be required to keep the works going from day to day. The excess has varied in different parts of the district. We have heard it fixed as high as five men when work could be found for only four, and that difference has lessened down to one in ten above what should have been the actual requirements. If the masters had taken the alternative of this arrangement, and have engaged exactly only so many men as they had places for in bave engaged exactly only so many men as they had places for in the pit, they must have carried out the Masters and Servants Act rigorously, and have enforced the attendance of every man full t me. The interest of the bulk of the workers, as well as his own interest, would have necessitated that the master should in that case interest, would have necessitated that the master should in that case have compelled every man to abide by his hiring. This, however, would have appeared to be a very harsh proceeding, and the discipline would have been as rigorous as that aboard ship. It can be hardly a cause of surprise that colliery proprietors have hitherto shrunk from the responsibility of being the prosecutors as well as the employers of their workpeople. Under such an arrangement there have no doubt, been occasions upon which colliers willing to there have, no doubt, been occasions upon which colliers willing to work full time, have been sent back home because it was their turn to stand by; but they knew perfectly well the reason why, and the circumstances under which the day's employment could not be availed for them. ovided for them.
We call attention to this subject because the masters have now re

seived a direct challenge which must put them on the alert to pro-tect themselves by carrying out the law. A case has arisen in the budley district in which a man under the ordinary 14 days? notice to quit his employment demanded to be employed for six whole to quit his employment demanded to be employed for six whole working days—i.e., his full time—or to have his full pay; and he brought his case into the County Court there, and through his solicitor argued it before Mr. RUPERT KETTLE, the Judge. The pleading showed that a sort of sub-custom has sprung up whereby full time has been given to workmen when they have been under notice. There can be no reason, either in law or good morals, why men under notice should be treated differently to the other colliers in the same with that increments of the weakless made and the resident state. pit; but inasmuch as the workmen under notice could always raise the strict question of right, there has been a tacit understand-ing that whoever might be required to go back the men under noing that whoever might be required to go back the men under notice must go down and have full employment found them every working day. In the case decided by Mr. Kettle man under notice had each morning attended at the pit and tendered himself to work, but he had only been taken on in his turn, according to the arrangements which we are discussing. He now claimed to be paid for his full time, for he had been willing to work and had offered himself to go down. By the colliery rules it appeared that a 14 days' notice was to be given on either side, unless from shortness of trade or other unavoidable causes no work could be provided. In that event the workman might leave, or he might be discharged without notice; but there was no shortness of trade in this case, nor did the masters succeed in establishing any unavoidable circumstances. Even if they had, it would only be a reason for determining the contract, and not a reason for omitting or refusing to find employment whilst the contract of hiring existed. They had, in fact, kept the man on as their hired servant during the fortnight, but had failed to find him regular employment during that time. Upon this the Judge held that inasmuch as the man was bound to hold himself at the service

that inasmuch as the man was bound to hold himself at the service of the masters, and could have been prosecuted under the Masters and Servants Act for departing from his hiring, the master was reciprocally bound, and must, therefore, find the man work.

Now, therefore, that it has been declared authoritatively, and, no doubt, with respect to its strict legality properly declared, that where the man is bound to work for the master the master is bound to find the man employment, this system of mutual accommodation at the Staffordshire Collieries must be discontinued. The masters must enforce the law, and it will not lie in the mouths of the men to complain that the law is enforced. If the masters are forbidden to get substitutes they must rely upon the punctual atforbidden to get substitutes they must rely upon the punctual at-tendance of each man to his work. We, too, rely upon it, and the public, who have shown so much sympathy with the men, will rely upon it. And if experience should prove that none of us can rely upon it then the masters must enforce the law. It becomes their duty to enforce the law, and the law is as strong to protect them in enforcing their part of the contract as it is to give the remedy to the workman against his employer. The general issue of a clear under-standing upon this subject should be beneficial to both employers standing upon this subject should be beneficial to both employers and employed. So long as there was a permissive laxity on both sides the men were permitted to indulge in habits of negligence altogether subversive of that discipline which is absolutely necessary to the safe and profitable conduct of a colliery. It is morally impossible to tell men of this class that they must play one day for their master and must not play another day for themselves. This loose practice, although not perhaps the whole cause, is yet one of the principal causes of the neglect of work, and consequent short time and diminished output, of which the masters complain so bitterly, and for which the country pays so dearly; and we feel sure that public opinion will support the masters when they do their days and enforce the law by which it is so entirely condemned. duty, and enforce the law by which it is so entirely condemned.

PREVENTION OF ACCIDENTS FROM OVER-WINDING OR BREAKAGE OF ROPE.—Mr. W. S. UNDERHILL, of Newport, Salop, manufacturer, and of
F. J. SNOW, of Shiffnal, engineer, have obtained a patent for certain improvements
in apparatus to be used with cages for mines and shafts, for the prevention of accidents through over winding or breakage of the winding-ropes. They say—"In carrying out our said invention we attach two ordinary diagonal suspension chains to
the winding rope or chain, and from these we suspend the cage. The supporting of
eatches to which the said diagonal chains are attached are not premanently secured to
the cage or other receptacle employed, but are held vertically in position at each
side of the cage by means of latches turning upon horizontal pins, each latch having
a handle or tale end projecting horizontally when in ordinary use. The guides
between which the cage travels terminate at a suitable height above the mouth of
the pit, and are furnished with strong bolts, which project in such manner as to
catch and depress the tail ends or handles of the aforesaid latches, should the said
cage, and pass away with the winding rope. In departing each eatch lifts into a
horizontal position an arm, which is hinged at its upper end to the said cage, and
which, when it is in its ordinary veriteal position, transmits the weight of the cage
to the supporting eatch. Each hinged arm has a stop to prevent it from rising
above the horizontal line. Upon the said cage attempting to fall after the release
of the supporting catches, and consequently of the winding rope or clain, the said
hozizontal hinged arms catch upon the top of the said cage and supporting catches in two
the cage, and particularly our invention to prevent accidents from the breakage of the winding rope, we make each of the aforesaid supporting catches in two
pieces, the upper piece being hinged to the lower piece. The upper piece has an
endominant to the said cage, the principal catches in two PREVENTION OF ACCIDENTS FROM OVER-WINDING OR BREAK-E OF ROPE.—Mr. W. S. UNDERHILL, of Newport, Salop, manufacturer. and

external hook or catch at its upper end, which, when the rope breaks, is forced by a spring into a gear with ratchet shaped teeth formed upon the inner face of each guide bar, but as long as the rope or chain is unbroken, and the cage hangs therefrom, the tension of the diagonal suspension chains counteract the force of the spring, and holds the upper catches out of action."

NEW SAFETY-LAMP FOR MINERS.

Reference has several times been made in the Mining Journal to a new safety-lamp for miners, invented and patented by Mr. Marcus Israel Landau, of St. Mary Axe, and as a lamp upon the new principle has now been constructed a more conclusive opinion can be formed as to its merits. The wick tube is surrounded by three concentric chambers, one-half of the outermost of these being used as the oil reservoir. The remaining half of the outer chamber is perforated to admit air to the wire gauge or perforated metal with centric chambers, one-hair of the outermost of these being used as the oil reservoir. The remaining half of the outer chamber is perforated to admit air to the wire gauze or perforated metal with which the second chamber is protected, and to render direct communication between the external atmosphere and the flame impossible, the perforated metal connecting the second with the inner chamber is placed on the opposite side of the lamp from that which connects the outermost and second chambers. Similarly careful provision is made for the escape of the products of combustion, the top of the lamp being formed of a spiral plate of metal of conical form, and the perforations being provided only at the innermost and outermost ends of the spiral the heating of the outer perforations is prevented. There are several ingenious contrivances in connection with the locking and re-opening of the lamp which have been introduced with a view to prevent the exposure of the flame. Upon the axle carrying the wheel for elevating the wick there is placed a wheel which, upon the top of the lamp being unscrewed, is operated by a series of projections on the lamp top, and lowers the wick into the tube, thus extinguishing the flame. This axle is slightly moveable longitudinally, and the locking screw, which is about \$\frac{1}{2}\$ in diameter, is so placed that in locking the lamp it forces the axle forward, and throwing a pinion thereon into gear with a wheel permits of the wick being raised and lowed from the outside. It will, of course, be understood that whilst the locking screw is in position the lamp top cannot be unserved and that when the screwis withdrawn the where being raised and lowed from the outside. It will, or course, be understood that whilst the locking screw is in position the lamp top cannot be unscrewed, and that when the screw is withdrawn the movement of the wick cannot be effected from the outside, nor can the extinguishing of the flame by the action upon the turning wheel

the extinguishing of the flame by the action upon the turning wheel of the projections in the lamp top be prevented.

With regard to the general action of the lamp, it is explained in the specification that the mode in which the lower portion of the lamp is arranged is such that the flame only draws just sufficient air for combustion at the lower part of the lamp, and if there be a rush of inflammable gas or fire-damp in force the flame would be extinguished. Moreover, it is continued, by this arrangement, the entry of air or gas from the outside at the upper part of the lamp is prevented, no air being drawn in at that part to feed the flame, and thus the danger of admission of deleterious gas is prevented; there are man-holes for cleaning the chimney.

thus the danger of admission of deleterious gas is prevented; there are man-holes for cleaning the chimney.

The various arrangements included in the invention may, Mr. Landau considers, be applied to furnaces, fire-places, and apparatus for heating, especially for maintaining heat and combustion, securing safety, and preventing the evolving of noxious or deleterious vapours. The arrangements may also be applied for ventilation. In the lamp experimented with by Mr. Landau, at the Mining Journal Office, he demonstrated that the flame was instantly extinguished by the admission of gas through the perforations below the level of the flame, and that no effect whatever was produced by bringing the gas into contact with the lamp top; therefore explosion in a the gas into contact with the lamp top; therefore explosion in a mine where such a lamp is used would be impossible.

INDUSTRIAL DEVELOPMENT-WHITLEY PARTNERS.

After 29 years of success as a private undertaking the well-known business of Messrs. WHITLEY PARTNERS, mechanical engineers and export merchants, is about to be converted into a public company, and from the terms upon which the transfer is to be effected it is considered that the profits to be realised by the shareholders of the new concern will even exceed those which have been earned by the private firm. The object of the conversion is to promit the period. private firm. The object of the conversion is to permit the senior partner, who founded the business in 1844, to retire from active engagements requiring his personal care, and also to render availprivate firm. The object of the conversion is to permit the semior partner, who founded the business in 1844, to retire from active engagements requiring his personal care, and also to render available a larger capital now required, owing to the leading branches of the trade having become so developed. It is mentioned that the works are in a thorough-going order, are actively employed on contracts of a profitable nature; and that, judging from the earnings of past years, a net profit of 16 per cent, may fairly be anticipated, with every prospect of a considerable increase. The valuations of the stock-in-trade, plant, machinery, buildings, and land have been made by Messra. Edward Field and W. Lloyd Wise, and an independent valuation of the whole concern has also been made by Dr. Farr, F.R.S., who estimates its actual value on Jan. I last, inclusive of the goodwill (which is valued at under three years' purchase), but exclusive of all patent rights and licenses, except Allen's governor and Peet's valve, at 126,000%; yet the purchase of the whole of the real estate, buildings, plant, machinery, stock-in-trade, goodwill, English and foreign patent rights, licenses, agencies, and contracts in hand, as a going consern, as it stood on Dec. 31 last has been effected for 100,00%, payable one-half in cash, by four instalments extending over twelve months, and the remainder in fully-paid shares, which are to receive no dividend in each of the first three years unless and until the sum available in each of those years shall amount to at least 7½ per cent. on the shares held by the other shareholders. It has been wisely determined to keep the management and working staff as nearly as possible upon the same basis as a tpresent. Mr. Joseph Whitley, the retiring partner, will occupy a seat at the board, and Mr. John R. Whitley, the active member of the late firm, will join the board as managing director for a term of years: the services of the chief clerk and the staff of travellers and clerks of the late firm have also been

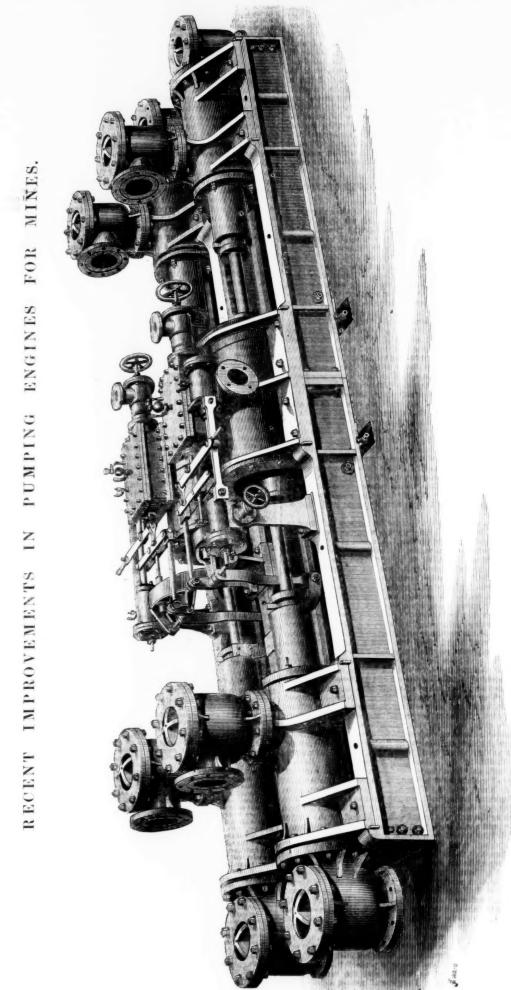
of the principal railway, gas, and water companies, corporations, landowners, engineers, shipbuilders, ironmasters, colliery proprietors, millowners, merchants, ironmongers, &c., in all parts of the world.

Considerable importance is attached to the practical experience of the managing director, who has resided many years on the Continent, and possesses a knowledge of foreign languages, and it is added that his being aided by a staff which includes several technical foreign correspondents and travellers will enable the company to conduct their business abroad direct with the continental firms. The extent to which Allen's governor and Peet's valve are used is generally known, but the company will also take over many other inventions which have been rapidly growing in favour; amongst these are Berryman's feed regulator and feed-water-heater for boilers, Crossley and Hanson's self-acting reducing valve, Field and Cotton's direct expansion compound steam-engine, Hanson's variable expansion compound steam-engine, Hanson's variable expansion gear, Smyth's motor for driving sewing and other machines, the "Best" steam boiler (Hanson and Norton's patents), and the "Victoria" steam pump. The firm has always been very successful in obtaining prizes at the various industrial exhibitions at which their goods have been shown, and the award just received at Vienna—the Medal for Merit, "for excellence in material and workmanship, the employment of improved tools and machinery, and the opening of new markets"—cannot fail to ensure a high opinion as to the prospects of the company.

TIN-PLATES. -Mr. T. F. PARSONS, of Maindee, chemist. has patented an improved process of cleaning and polishing tin and other plates. He says—"
take the plates after their immersion in oil, and dip them in a bath of hot alkalin
water. Then the stid plates are passed through a polishing machine, which give
them a brilliant finish. During the operation of polishing the plates the said rolle
are supplied with bran or other suitable polishing substance."

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RECENT IMPROVEMENTS IN PUMPING-ENGINES FOR MINES.

At a recent meeting of the Society of Engineers an interesting paper on this subject was read by Mr. HENRY DAVEY, with the view chiefly of bringing before the society two recent modifications in pumping machinery. In doing so he purposed to touch upon some designing pumping machinery for mines, as also in designing steam machinery of all kinds, the three great questions which should be thoroughly and relatively considered are—economy of fuel, economy of maintenance, and economy of construction. After briefly directing attacking the continuous terms of the continuous contractions. cted with pumping-engines generally of maintenance, and economy of construction. After briefly directing attention to these questions, the author proceeded to describe the new pumping-engines for pit and dip workings, which were illustrated by models, drawings, and photographs. The importance of economy in fuel was never more keenly realised than at the present time, notwithstanding the great advances which have been made to reduce the consumption. Our steam-engines consume annually 37,000,000 tons of coal, which at the present moment may, perhaps, be reckoned at 15s. per ton, representing over 27,000,000. sterling; an economy of 25 per cent. would, therefore, effect a saving of nearly an economy of 25 per cent, would, therefore, effect a saving of nearly 7,000,000, annually. In Cornwall the cost of coal has, ever since the introduction of the steam-engine, into that county, been a subject of vital interest to the mining community, and in a period of 20 years the improvement effected in the Cornish pumping-engine reduced the consumption of coal to one-third that at first required, reduced the consumption of coal of one and that the present price making a saving of 90,000% per annum, which, at the present price of coal, would amount to 140,000% sterling. Whilst the engineers of Cornwall were thus perfecting their engines and developing the principle of expansion, colliery proprietors could well afford to be

careless on the matter, but the time has now arrived when coal which can be used for steaming purposes in collieries meets with a profitable sale for other uses. Besides this, our coal mines are being worked deeper and deeper every year, so that the proportionate amount of pumping necessary for a given "output" is greatly augmented. At a coal pit in the North of England, where the author is now nutting down plant, the weight of water number greatly augmented. At a coal pit in the North of England, where the author is now putting down plant, the weight of water pumped to the surface in draining the workings will be nearly four times as great as that of the coal raised. With such enormous proportionate amount of pumping it is not unusual to find a consumption of from 12 lbs. to 16 lbs. of coal per horse-power per hour. A good compound engine will work with less than one-fourth that amount of fuel. The saving, therefore, to be effected on 400-horse power of actual work by the substitution of a compound engine would be at the lowest estimate 36 tons in 24 hours, which, taken at 5s. per ton at the pit's mouth, would amount to the modest sum of 2700l, per annum. The old 400-horse power engine, consuming about 50 tons at the pits mouth, would amount to the modes wan of 2015. For annum. The old 400-horse power engine, consuming about 50 tons of coal per day, would weigh, probably, from 90 tons to 100 tons, if a single-acting engine, as many are, whereas a compound engine of the same power, which the author will presently describe, weighs only about 55 tons.

The author is now constructing one of these engines to rep an old one, engaging that it shall consume only one-fourth the fuel now used. It is well known that the leading principle of economy in the steam-engine is that of expansion of steam, and the introduction of the second cylinders to form a compound engine gives no theoretical advantage, but is purely a practical question. By t introduction of the second cylinder the maximum strain thrown the piston and its attachments is greatly reduced, and a greater uniformity of motion and of strain is secured. In the example before

us the variation of force during the stroke is about three to a with an eightfold expansion, whereas with a single-cylinder egga it would be as eight to one. In Cornwall some years ago, during the race for economy of fuel, engineers carried expansion in a single cylinder to the utmost limit; Taylor's 85-in. Cornish engine, having a 10-ft. stroke, was worked at the United Mines with a tended a pansion, and did a duty of 112,000,000, but it ultimately broke done from the excessive strain thus thrown on the pump-rods. Single pansion, and did a duty of 112,000,000, but it ultimately broke done from the excessive strain thus thrown on the pump-rods. Single proved that which has been proved over and over againstant as the such a grade of expansion cannot be safely employed. This that such a grade of expansion cannot be safely employed in a single cylinder engine. Cornish engines are now worked with a threefold and at most a fivefold, expansion, and this partly accounts for the second cylinder is necessary where expansion is carried to a gratextent. The author would here remark that the practice of recording the duty which has been carried out in Cornwall might be advantageously adopted in the colliery districts, but the report should be more complete than those of Cornwall, and should give the grade expansion and the boiler pressure employed, besides sepansing the duty of the boiler from that of the engine. Thirty years go whereas now it scarcely reaches 48,000,000, and it is a great pity that the duty reports have not recorded the grades of expansions, for the we should probably be able readily to discover the cause of the failing off in efficiency. There are two types of the differential expansion pumping-engine—the single cylinder and the compound engine—the designs and arrangements of each being varied to suit different applications. On the screen Mr. Davey showed drawings of a control of the screen Mr. Davey showed drawings of a control of the screen Mr. Davey showed drawings of a control of the screen Mr. Davey sion pumping-engine—the single cylinder and the compound entire the designs and arrangements of each being varied to suit disapplications. On the screen Mr. Davey showed drawings of a pound engine now being constructed by Messrs. Hathorn, and Campbell, of the Sun Foundry, Leeds, for the New H Colliery, in the North of England; and he also exhibited graphs of a a pair of single cylinder engines at the Clay Cropilery, and of a pair of similar engines at Newton Cap Cowhich which have been made by the same firm. It will be seen the compound engine consists of a pair of horizontal cylinder in the compound of the covers of the lower pressure cylinder. These parts of the covers of the lower pressure cylinder. placed end to end, the bottom of the high-pressure cylinder for ing one of the covers of the low-pressure cylinder. There are the piston-rods to the low-pressure piston which pass through usest on the jacket of the high-pressure cylinder, so that they are the same plane with the rod of the high-pressure piston. These the rods are coupled to one crosshead, to which is attached the comming-rod for working the pumps. The cylinders are firmly seed to a strong girder-bed, and the condenser is carried on a separated at the rear of the engine. The air-pump bucket being work yellow means of a tail-rod from the low-pressure piston, such is simple form of the engine, but the valve gear, though equally a be in construction, is more difficult to describe without the side in construction, is more difficult to describe without the side of the coverage of the construction of the engine of the coverage of the construction of the engine of the coverage of the c

e in construction, is more difficult to describe without the aid to model which lies on the table. The main slide valve is actuated by means of a lever, deriving The main slide valve is actuated by means of a lever, deriving motion partly from the main and partly from a subsidiary pitche connection to the main valve is in the centre of the lever, the connection to the two pistons at the opposite ends. The activities will be best understood by assuming the main piston to be at at one end of the cylinder; to start the engine steam would be nitted to the subsidiary piston, causing it to carry the lever ward, opening the main valve, admitting steam, and thereby complete main piston to complete its stroke; but this piston independent of the main piston to complete its stroke; but this piston independent of the main valve then has a differential motion, compounded of motions of the main and subsidiary pistons. The motion give on moves the main lever in the opposite direction, and cuts off star. The main valve then has a differential motion, compounded of motions of the main and subsidiary pistons. The motion given the subsidiary piston is rendered constant by means of a double a ting cataract, which the author will presently describe. The cataract end of the lever has a constant motion, independently of a engine itself, and the other end has a varying motion, depending, the varying motion of the main piston. The resultant motion the main valve being obtained from the centre of the lever, a being compounded of a varying and a constant motion, must be easarily also vary; variations of load on the engine produce various in the motion of the main piston; in other words, the incear decrease of load increases or diminishes the supply of stam; or decrease of load increases or diminishes the supply of stam; the cylinder. The cataract end of the lever is attached to the sidiary piston-rod, which rod is continued into the cataract different with a gun-metal piston fitting the cataract cylinder; a cylinder is filled with water, and is provided with a passage laing from one end to the other; in the passage is fitted anadigate plug for regulating the speed of the engine. It should be make that the force acting on the subsidiary piston is far great than that required to move the slide-valve, the surplus power bases of the different pictures a very great variation of force on the subsidiary piston is far great variation of the course a very small variation in the water day that the second of the course a very small variation in the water day that the second of the subsidiary in the water day that these peed, it requires a very great variation of force on the subsi-sistent to cause a very small variation in the speed, so that thes s practically constant for a given adjustment of the cataract although the boiler pressure may vary. It will, therefore, be that the chief peculiarity in the invention is the simple mann which the engine is rendered safe in working against variable which the engine is rendered safe in working against variable lost, automatically and instantly varying the distribution of steam winevery minute increase or decrease of resistance. A slight passes produced at the completion of each single stroke of the piston, during which time the pump-valves fall to their seats, preventing sip and the shock which occurs when pump-valves close underpresses from a moving plunger. The freedom from shocks in the pumps an important point, as it affords security against accident, such a bursting pipes, &c., and the durability of the valves and seats greatly increased. The action of the valve-genr of the engine is sensitive and so perfect that the load may be greatly varied on the engine when it is in full work without any injurious effect. Engines on this plan may be employed to pump direct into town main without the intervention of stand-pipes, balance-valves, or anything of the sort. There is great economy in the construction of these

without the intervention of stand-pipes, balance-valves, of anyung of the sort. There is great economy in the construction of these gines, and in the buildings which they occupy.

The single-cylinder engines are in use underground, and are employed in pumping the water direct to the surface. The pairattle Clay Cross Collieries pump against 1000 ft. head of water, whilst those at Newton Cap have 240 ft. This method of pumping indileries is becoming very usual, and where there is no chance of the engine being flooded it is probably the best, and certainly themse economical, plan as regards first cost. The construction of these engines is similar to that of the compound engine, minus the high-pressure cylinder. The compound engine just described is placed

economical, plan as regards first cost. The construction of the engines is similar to that of the compound engine, minus the highest pressure cylinder. The compound engine just described is placed above ground, whereas these engines are placed below, and are selected on one bed-plate, with the pumps.

The photographs show no condensers, although the larger pair of engines is provided with one. It is not, however, a part of the gine, but is entirely distinct, the air-pump being worked by means of a small hydraulic engine from the pressure in the main column. In a more recent design the author has put the air-pump on the lew with the engine, and worked them by means of a tail-rod from the main piston, the pumps being both placed in front of the cylinder, with a plunger common to both barrels. Very severe tests have been imposed on the differential expansive engine by suddenly throwing off the load when the engine is in full work, with its stop-valve wide open; this has been done with impunity; there is, therefore, security against accident resulting from the breaking of a spear, the failing of a pump pipe or a valve—fruitfal sources of breakage in with the ordinary pumping-engine.

Dip workings in mines are not easy, and are very expensive to drain by means of pumps driven from the main rods, especially where the dip is but little, nor is it always possible or expedient useless, making it necessary to put down other means of getting out the water. To meet these difficulties the late Messrs. Caret.

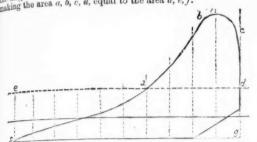
use a steam-pump. The pump may be flooded, and there of getting useless, making it necessary to put down other means of getting out the water. To meet these difficulties the late Mesers Carett out the water. out the water. To meet these difficulties the late accesses Marshall, and Co. introduced the hydraulic pumping-engine. The engines are now made by the firm before mentioned, and considered to a hydraulic direct-acting engine and double-acting pump. The mode of application may thus be described:

The engine is placed at the bottom of the dip, a supply pipe is carried to it from the main column, and the delivery pipe from the pumping lad to the pain supply. The construction of the engine will aci de ca' en tio m ar w

pump is led to the main sump. The construction of the engin be readily understood from the drawings and the model. The

ches have been fixed in various collieries. The diagram, taken by the series have been fixed in various collieries. The diagram, taken by the work one of the engines at the Clay Cross Collieries shortly lift. Howe from one of the engines at the Clay Cross Collieries shortly after it was put to work, shows that the engine did 80 per cent. of after it was put to work, shows that the engine did 80 per cent. of after it was put to work, shows the engine was under water for two months, but it continued work engine was under water for two months, but it continued work in the employment of water pressure from the main column or for the tabbing, and the use of the hydraulic dip pumping-engine from the tabbing, and the use of the hydraulic dip pumping-engine we as atep in the right direction. In whatever way the supply to sens atep in the right direction. In whatever way the supply to sens atep in the right direction. In whatever way the supply to sens a seep in the right direction. In whatever way the supply to sens a seep in the right direction. In whatever way the supply to a sense of the work done by hydraulic engines, the the various underground work were done by hydraulic engines, the samp great obstacle to the practical application of hydraulic sense for hauling purposes as well as for pumping, thereby discenses for hauling purposes as well as for pumping, thereby discenses with all bollers and steam pipes in the pit.

In the former part of the paper the author contended that there in the former part of the paper the author contended that there are difficulties encountered in using steam very expansively in non-notative engines which render the adoption of the compound system spedient, if not imperative. Other reasons besides those already stranged may be brought forward. Subjoined is sketched a diagram alse from a Cornish engine. The line drawn horizontally through be diagram cuts the expansion line at the point of average pressure, naking the area a, b, c, d, equal to the area a, e, f. les have been fixed in various collieries. The diagram, taken by



It is evident that if the diagram was produced by a constant force recoming a constant resistance it would take the form of the pallelogram, e, f, g, d, but under such circumstances the steam would at be expanded. In the Cornish engine the load lifted is a constant with the steam can be at the steam of the steam antity, and that steam can be at all expanded on the piston is due the fact that the moving load is a mass of matter, and not merely opposing force. The expansive force of the steam can be utilised composing force. The expansive force of the steam can be utilised cause the mass, in being changed from a state of rest to that of quick stion, absorbs or stores up an amount of energy which is expended ring the second change from quick motion to the former state of st. In other words, during the first change energy, represented by a portion of the diagram, a, b, c, d, is accumulated, and this energy, this is also represented by the area, a, e, f, is during the second ringe expended. The energy of the mass equals $\frac{W_0 r^2}{2g}$, and the

gy represented by the area, a, b, c, d, equals the mean pressure of portion of the diagram multiplied by the distance, a, d, and the tant multiplied by the area of the piston, making in the pre-example 150 foot-tons. It is evident that the energy of the at example 150 foot-tons.

entexample 150 foot-tons. It is evident that the energy of the pass must equal this energy to produce the diagram; it is also evient from the above formula—viz., $\frac{Wv^2}{2g}$, that at about 500 feet per sinute piston speed energy = W; therefore, to produce the diagram he mass to be set in motion at about 500 feet piston speed must be 500 tons. The author knows that to be about the weight of the loving mass in the practical example which he has selected. The aid on the piston is not more than 50 tons, and if the engine had pmass to set in motion beyond the column of water to be lifted, the required velocity of that mass necessary to give it the required quired velocity of that mass necessary to give it the required y would be beyond all practical limit. On the other hand, if locity of the mass is limited to 4 feet per second, then the red mass would be about 600 tons, although the expansion is only

were to be made double-acting, and employed to this engine were to be made double-acting, and employed to water on the steam-stroke, it would be expedient, for practical rel as theoretical reasons, to limit the piston speed to 4 ft. per and, making it necessary, as the author has already shown, to ride a moving mass of 600 tons, but with the compound engine king under similar conditions only a very small moving mass bid be necessary, because the variation in the effective pressures not the stroke would be comparatively very little. An expanding the stroke would be comparatively very little, an expanding the stroke would be comparatively very little. An expanding the stroke would engine only 2 28 to 1. The reasons for are obvious. The Cornish engine is a very costly machine; it oly single acting, and it requires a great moving mass to make is are obvious. The Cornish engine is a very costly machine; it only single acting, and it requires a great moving mass to make practicable to employ a high degree of expansion, nor can it be ade double acting without either making it necessary to increase e mass beyond a practical limit or to employ a low ratio of expansion, involving a great waste of fuel. To meet these difficulties eathor has produced the compound differential expansion engine, which expansion may be carried to a great extent, with a piston ead not to great for extenting runners during both strakes. ed not too great for actuating pumps during both strokes, nor uring a heavy moving mass, making it practicable to secure nomy of fuel with a comparatively small outlay of capital. The conomy of fuel with a comparatively small outlay of capital. In edillowing description of the differential valve gear will make its cion clear:—The main slide valves receive their motion from a lever a the centre, to which they are connected. This lever receives two notions, one at the end derived directly from the main moving arts of the engine by another lever of the first order, which, resiving the full motion of the piston at the long end, imparts from a short limb to the end of the level the amount of motion suitable to the working of the valve, and another motion derived from a he working of the valve, and another motion derived from a sidiary piston. This subsidiary piston receives its motion from steam in the main slide chest by means of a small valve, and subsidiary piston. This subsidiary piston the steam in the main slide cheet by means of a small valve, and the steam in the main slide cheet by means of a small valve, and gives motion to a cataract piston working in a cylinder filled with water, which escapes from side to side through small openings, that can be regulated to pleasure by means of the valve. This cataract regulates the speed of the piston, and, consequently, the motion of the end of the lever to which it is attached. The valve admitting steam on the subsidiary piston is actuated by means of a lever, to which it is attached, and this lever receives motion from the lever by a consecting link. When it is required to start the engine motion can be given to the valve by removing the pivot of the lever, and moving the lever by hand. ing the lever by hand.

The action of this gear upon the motion of the engine will be best

understood by an illustration.—Suppose the main piston to be at rest at one end of the cylinder, then to start the engine steam would be additionally in the start the engine steam would be additionally in the start the engine steam would be additionally in the start the engine steam would be added to the start the engine steam would be added to the start the engine steam would be added to the start the engine with the start the start the engine with the start the start the engine with the start that the start the start that the start the engine with the start that the s be admitted by hand into the subsidiary cylinder, and motion would be communicated to the valves, and the engine would commence its stroke; as it moves, however, it is giving motion to the lever in a contrary direction to the motion communicated by the subsidiary piston, and cuts off the steam. The main valve, therefore, has a differential motion compounded of the motion derived from the direct action of the main cylinder and an opposite motion from the subsidiary piston. Now, the motion of this subsidiary piston is rendered constant by means of the cataract. Seeing, ther, that the cataract end of the lever has a constant motion independent of the engine itself, and that the other end must needs have a varying motion depending on the varying load on the engine, then the resultant motion of the main valve being taken from the centre of the lever and compounded of a varying and a constant motion, must also vary with every variation in the motion of the main piston.

MOTIVE-POWER FROM RUNNING WATER.—The invention of Mr. Rago, of aston, near Birmingham, consists in so constructing and arranging a shot water-wheels, and appliances connected therewith, that the maximum, arry maximum, amount of motive power is obtained from streams having but fall. According to this invention the stream is confined, where practicable, to annel having an inclined bottom equal to the fall in the stream, and in the said and at a short distance apart a series of under-shot water-wheels is arried one above the other, the axles of the several water-wheels being supported

n the top of the walls of the channel. The water passing down the channel ter acting on the first wheel, passes to and acts on the second wheel, and so on ofter acting on the first wheel, passes to and acts on the second wheel, and so on the several water-wheels are connected together by toothed or other gearing, so that their combined power may be transmitted through the axle of any one of them of the required point. They are also provided with clutches, whereby they are apable of being readily geared to or ungeared from one another. When a brick or other artificial channel is not employed, the water-wheels and gearing are car-ticle by supports built in the bed of the stream.

SILVER ORES, AND THEIR MODES OF REDUCTION-No. II. BY W. T. RICKARD, F.C.S

When amalgamation has been completed, which is known by the thickening of the mercury, which is examined from time to time, the contents of the circo are drawn off into large vats or settlers where the amalgam subsides during a gentle agitation, accompanied by a stream of water, which gradually carries off the tailings, or relaces, as they are termed by the Peruvians and Chilians. The exretwes, as they are termed by the Peruvians and Chilians. The excess of mercury is then strained through chamois leather or linen bags, and the amalgam distilled under the caparuse (or bell), by which the mercury is collected, per descentum, in a vessel of water under the hearth. The loss of mercury by this barbarous system of distillation is only equalled by the loss in amalgamation. The aggregate loss, as admitted by Peruvian miners, is 1 lb. of mercury to each marc of 8 ozs. of silver obtained by this process.

As these Peruvian over contain much sulphide of silver like those

of 8 ozs. of silver obtained by this process.

As these Peruvian ores contain much sulphide of silver, like those of the Comstock lead, I may here describe the rationale of the process by which the unroasted sulphide of silver is reduced through the agency of sulphate of copper, salt, and mercury. The salt and sulphate of copper decompose each other, proto-chloride of copper and sulphate of soda being produced, while the metallic silver present, or reduced by electro-chemical action, decomposes the proto-chloride of copper, and by reducing it to the condition of subchloride, is itself converted into the chloride of silver. The subchloride of copper thus formed reacts on the sulphide of silver, forming sulphide of copper and chloride of silver—the mercury, in its turn, acts on the chloride of silver, forming sub-chloride of merits turn, acts on the chloride of silver, forming sub-chloride of mer-cury, while the liberated metallic silver combines, as an amalgam, with the excess of mercury. The indispensable condition of chlo-rinising the silver is thus complied with through the friendly inter-

rinising the silver is thus complied with through the friendly intervention of sulphate of copper, which acts as an intermediate agent in transferring chlorine from the sodium to the silver, so as to allow the latter to amalgamate with the mercury.

The process now in operation in Nevada and other places, although conducted on the same chemical principles as that of the patio, is a gigantic move in the right direction, although much remains to be done before we can escape the reproach of throwing away 30 per cent. of our precious metals. By amalgamating in iron vessels instead of on paved floors, we have reduced the loss of mercury, and consequently amalgam, to a mere fraction (about 1 lb. to a ton of ore operated on). [I will venture here to call attention to my own patent consequently amalgam, to a mere fraction (about 1 lb. to a ton of ore operated on). [I will venture here to call attention to my own patent amalgamating concentrator as the means of reducing labour and loss of mercury to a minimum. This machine is exhibited and explained at the assay office of Prof. White, 25, Finsbury-place, E.C.] By trituration with heated mercury we have reduced the time of amalgamation from 60 days to less than six hours, and the aggregate loss of silver from 50 to 30 per cent., or less.

The third method is that known as the Freiberg process, the essential characteristic of which is the roasting or calcining of the ores with salt, so as to thorougly chlorinise the silver previous to amalgamation. The Freiberg ores usually consist of the sulphide of silver, mixed with sulphides of arsenic, antimony, iron, zinc, &c. It is im-

gamation. The Freiberg ores usually consist of the sulphide of silver, mixed with sulphides of arsenic, antimony, iron, zinc, &c. It is important they should not contain more than 5 per cent. of lead or 1 per cent. of copper, as these metals greatly interfere with amalgamation; they amalgamate with mercury as readily as silver, and render the amalgam very tough, besides producing the effect known as the "sickening" of the mercury, which greatly diminishes its action on the silver.

action on the silver. The prepared ground ore is first spread on the hearth of the reverberatory furnace, and dried with incessant turning over—then the fire is raised so as to kindle the sulphur and keep the ore at a dull-red heat for two or three hours, during which time dense white-grey vapours of arsenic, antimony, and water are exhaled. The desulphurisation next begins with the appearance of a blue flame; this continues for about three hours, during which time the ignition is kept up and the mass diligently turned over, in order to present new surfaces, and also to prevent any caking. As soon as the vapours of sulphurous acid cease to be formed, the finishing calcination is to be commenced with increased fring.—the object heigh grow to decommenced with increased fringer—the object height of the sulphurous acid cease to be formed, the finishing calcination is to be commenced with increased firing—the object being now to decompose the salt (usually introduced into the furnace at this stage of the process) by metallic sulphates that have been generated by the previous roasting, and to convert them into chlorides, with the simultaneous production of sulphate of soda. The stirring is to be continued till the proofs taken from the hearth no longer betray the smell of sulphurous, but only hydrochloric acid gas.

The last roasting stage commonly lasts about three-quarters of an hour. During the last roasting the ore increases in bulk by about one-fourth, and becomes of a brown colour. When this process is completed the ore is raked out on the stone pavement, and allowed to cool, then screened in close sieve boxes, in order to separate the

to cool, then screened in close sieve boxes, in order to separate the finer powder from the lumps formed by coagulation during the roasting—these are to be bruised, mixed with salt, and subjected to another calcination; the fine powder is then subjected to the pul-verising action of millstones, or other suitable apparatus, and brought verising action of millstones, or other suitable apparatus, and brought to the condition of an impalpable powder, when it is ready for the

amalgamating process.

This is performed in casks, arranged in a horizontal position in rows, each turning on a shaft which passes through its axis. These casks are of various sizes, from a capacity to receive 1000 lbs. of ore, to casks are of various sizes, from a capacity to receive 1000 lbs. of ore, to that of 8000 lbs, as may be seen at the new French mill, Gold Hill, and are provided in most cases with iron ends—when charged with the sifted ore and about 20 per cent, of water; about 8 per cent, of metallic iron is introduced, for the purpose of reducing the chloride to the condition of metallic silver, when it amalgamates with the mercury. The casks, being charged, are set to revolve for $1\frac{1}{4}$ or 2 hours, till the ore-powder and water become a uniform pulp. The mercury is then introduced, and the casks again put in motion, at the rate of about 20 revolutions per minute, for 14 or 16 hours. During the rotation the temperature rises considerably, so that even in winter it sometimes stands as high as 104° Fahrenheit.

During the rotation the temperature rises considerably, so that even in winter it sometimes stands as high as 104° Fahrenheit. In this operation the chloride of silver is decomposed by the metallic iron, and the liberated silver amalgamated by the mercury. This matter is greatly facilitated and expedited by the presence of an excess of salt in the water, which, although taking no direct chemical action on the already chlorinised silver, increases the intensity of the reducing power of the iron, by its pre-disposing or electro-chemical agency, just as in the voltaic pile copper and silver are rendered active by a solution of salt. This fact is well known and appreciated by the amalgamators of Chili, who always use salt in the reduction of their ores of native and chloride of silver with advantage, both as regards time and produce. As soon as the amalrds time and p gamation is supposed to be complete, the casks are filled with water, and set revolving slowly (about six or eight times in a minute), whereby in the course of an hour the greater portion of the amalgam will have collected at the bottom, and in consequence of the dilution a portion of the chloride of silver held in solution by the salt will fall down and become decomposed and amalgamated The amalgam is then drawn off into suitable vessels, and the remaining portion of the casks run off into a vessel similar to the separators of Nevada, where the remaining portion of the amalgam is then strained and distilled in the usual manner, previous to the medium of the ailure into here. to the melting of the silver into bars.

The fourth process, which is very extensively practised in England, is that of smelting the refractory ores of silver with argentiferous galena; in this operation the lead ore is first crushed and concentrated by washing up to 60 or 70 per cent. of lead; it is then dried on the top of the reverberatory furnace, which in its most improved form is furnished with two hearths, one above the other, the dried ore is passed through a door in the roof of the upper hearth, where it undergoes a roasting and deaulphurising process at a temperature sufficiently low to avoid fusing the sulphide of lead. When this has been accomplished it is raked through an aperture into the hearth below, where it is kept some hours at a red heat; it comes out in a

vitrified condition, and contains about 90 per cent. of lead. The roasted ore is then broken up and mixed with limestone and small coal, metallic iron, and sometimes soda ash—the mixture thrown coal, metallic iron, and sometimes soda ash—the mixture thrown into the reducing furnace (which is on the cupola principle, similar to those used in the iron foundries), with alternate layers of coal. When the operation is completed the slags are nearly free from lead and silver, and a matt remains with the last portion, which contains about 20 per cent. of lead; this is broken up and returned to the furnace with the next charge. The poor and refractory ores of silver, such as tailings, are very advantageously treated by this process; they are first to be mixed with sufficient clay to give consistency to the mass to enable it to be moulded into small bricks; these are dried in the air till they will bear handling, and then introduced into the reducing furnace when at its full heat; the silver is taken up by the lead with all the accuracy of an ordinary assay, and is dried in the air till they will bear handling, and then introduced into the reducing furnace when at its full heat; the silver is taketh up by the lead with all the accuracy of an ordinary assay, and is afterwards separated by what is known as Pattinson's process for desilverising lead. This operation is performed in 12 to 34 cast-ifon pans, 5 to 3 ft. in diameter, and from 3 to 3½ ft. deep, set in two rows, back to back, in a range of brickwork, each pan being furnished with its own furnace. The argentierous lead is introduced into the pans at each extremity of the range, and when melted the fire is drawn and contents permitted to cool; as it does so the lead solidifies as small granular crystals from the sides of the pan towards the centre. When about one-half the quantity has solidified it is quickly fished out with large iron ladles (perforated so as to allow the fluid portion of the lead, which retains the silver, to flow back into the pan), and transferred to the next pan, where it undergoes the same process of melting, cooling, and fishing into the next pan, and so on till the solid fished lead is found to be free from silver, which is generally accomplished by the time it has reached the sixth pan, all the silver remaining with the fluid lead left in the different pans.

Fresh silver-lead is introduced into the first pan after each fishing, and the silver is thus concentrated in the fluid lead of each pan without increasing its bulk; this concentration goes on till it approaches 180 ozs. of silver to the ton of lead, having the concluding operations been performed by mixing the different fluid portions and gradually concentrating by repeated fishings in one small pan. When the rich-

been performed by mixing the different fluid portions and gradually concentrating by repeated fishings in one small pan. When the richness has arrived, 180 ozs. to the ton (which it should not be allowed to exceed), it is conveyed into a small pan, set in the same brickwork with the cupelling furnace, and fed into the cupel by a ladle through a channel of communication as required—the cupel is usually of an oval shape, 2 ft. long by 15 in. wide, and 3 in. thick—it works off its charge to saturation, and furnishes the plate of silver in about 20 hours; by this process lead containing but 6 ozs. of silver to the

off its charge to saturation, and furnishes the plate of silver in about 20 hours; by this process lead containing but 6 ozs, of silver to the ton is profitably worked—the loss of lead does not exceed 2 per cent., while its quality (i.e., malleability) is greatly improved by the extraction of the silver, desilverised lead being worth \$5 per ton more than that which contains silver enough to contaminate, but insufficient to pay for extraction.

When silver is found to exist in paying quantities in copper ores, which is often the case with the grey or antimonial ore of copper, the calcined ore is mixed with lead or lead ores, and fused or calcined, and the resulting products are either liquated, to sweat out the silver, or cupelled. In liquation the copper is turned into pigs (called liquation cakes), and kept above a red-heat for two or three days; the lead first smelts and flows into cast-iron troughs, carrying with it the silver, which is afterwards obtained by cupellation.

days; the lead first smelts and flows into cast-iron troughs, carrying with it the silver, which is afterwards obtained by cupellation. The fifth and last method of reduction to which I shall draw your attention is that known as the brine process, by which the chloride of silver formed by calcining and chlorinising in the reverbatory furnace is dissolved out of the other furnace products by means of a hot concentrated solution of salt, and the metallic silver obtained by precipitation with metallic copper.

This process was first introduced in Germany some years ago, but from some defects and obstacles in working it on the large scale it was for a long time regarded by practical men as a failure, until after a series of elaborate and expensive experiments, said to have cost over \$300,000, it was brought to perfection, and is now in suc-

cost over \$300,000, it was brought to perfection, and is now in suc-cessful operation in the copper smelting works of Vivian and Co., Swansea, where it is applied to the extraction of silver from copper swansel, where it is applied to the extraction of silver from copper ores with which refractory ores of silver are mixed, and is conducted simultaneously with the reduction of the copper. The ore is first ground and calcined in the usual manner in large furnaces, holding 3½ tons at a charge. It is then transferred to another reverbatory furnace, where it is smelted into a regulus, removing the slag as it is formed on the surface from time to time. As soon as the regulus shows bubbles over the surface the fusion is considered complete and the charge runoff into water in order to chain it in complete, and the charge run off into water, in order to obtain it in the granulated condition. The furnaces for this part of the process receive from 1 to 1½ ton at each charge. The granulated regulus is then ground to a fine powder, and introduced into a calcining furnace, holding about 600 lbs. at a charge, and a very gentle heat applied at first (as it partially burns of itself), say for five hours, when the temperature is to be raised as high as can be maintained (without melting) for six hours more making eleven hours in all for this the temperature is to be raised as high as can be maintained (without melting) for six hours more, making eleven hours in all for this desulphurising and oxidising operation. When taken from the furnace it is ground and sifted to an impalpable powder, and then thrown into another calcining furnace, and after being heated up for about an hour, 25 lbs. of salt are added, and the heat continued, with constant stirring, for about three-quarters of an hour more, when it is removed from the furnace and conveyed, when cold, to tubs of about 5ft. in diameter and 56 in. deep, furnished with perforated false bottoms, covered with canvas (well caulked around the sides), on which is placed a strainer of wicker-work. On this is thrown 800 lbs. of the stuff as it comes from the chlorinising furnaces, and upon it is poured a hot and nearly saturated solution of salt. The souths, or the stuff as it comes from the chormising furnaces, and upon it is poured a hot and nearly saturated solution of salt. The temperature should not be lower than 170° Fahr., nor the strength below 43° of Twaddle's hydrometer. This is allowed to rest awhile, and the liquor filtered off into another similar tub, but containing waste copper clippings, or filings, about 3 in. deep. Here the metallic silver is precipitated by the copper, after which the solution containing copper, which has replaced the silver, is drawn off into a third or fourth tub, containing iron clippings, in which the copper, in its turn, is recovered by precipitation on the surface of the rotallic iron. metallic iron.

The fine crystalline metallic silver is then separated from the cop-

The nine crystalline metallic silver is then separated from the copper by agitation and washing, and at once melted into bars.

The precipitated copper is treated in the same manner, while the furnace products, deprived of their silver in the first tub, are taken to the reducing furnace, where the metallic copper is melted out and refined in the usual manner.

In comparing the Nevada system of working with these various processes it will be each temperature of the Maximum.

rocesses it will be seen to consist of an adaptation of the Mexican r Peruvian methods with the Freiberg system, whereby the un-oasted sulphides are rapidly, though imperfectly, reduced during the process of final pulverisation in iron pans, through the intervention of sulphate of copper and salt. Very little can be said in favour of the other chemical substances employed, many of them being totally inactive; and some of them positively injurious. Sulphyric acid in some cases appears to act beneficially in generating phuric acid, in some cases appears to act beneficially, in generating hydrochloric acid, which dissolves the iron scales formed in the pans and floating on the surface of the mercury, which prevents contact and amalgamation with the silver of the ore. The value of sodium in amalgamation still remains to be proved on the working scale, although the results in the laboratory of Mr. Crooks (the discoverer

of its peculiar properties) are said to be very remarkable,
The mechanical part of the operation appears to have arrived at
the highest degree of perfection, by means of improved stamps for
coarse grinding, and the various and excellent pans in use for final
pulverisation, each being judiciously adapted to the work it is best
calculated to perform in the most economical manner.

Although during the last few years many very ingenious plans

calculated to perform in the most economical manner.

Although during the last few years many very ingenious plans for crushing have been introduced, the old Cornish stamps still carries off the palm for rapid and cheap coarse grinding. It has been superseded by the Wheeler pan, and other similar contrivances for impalpable pulverisation, while the two together form, probably, the most perfect quartz mill that can be constructed.

It is to improved methods of amalgamation we must look for the means of reducing the heavy loss of silver now heing sustained in

means of reducing the heavy loss of silver now being sustained in working the Comstock ores, and other silver ores; and it is very gratifying to find our millmen are seriously and earnestly turning their attention in this direction.



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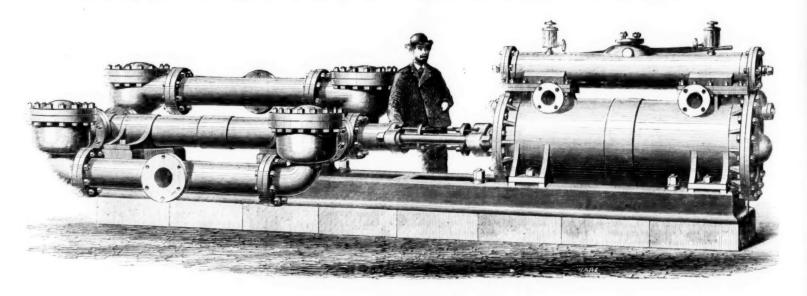
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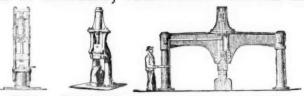


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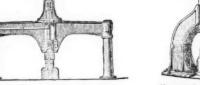
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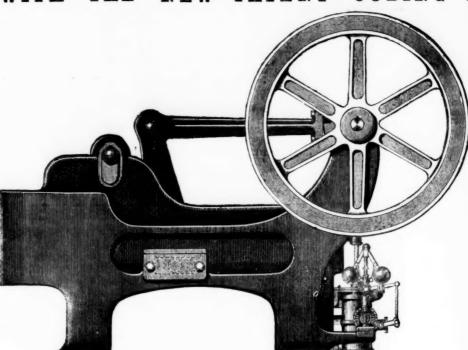
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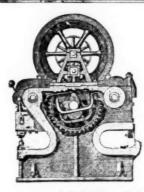
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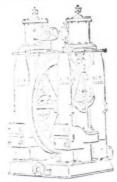
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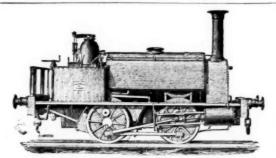




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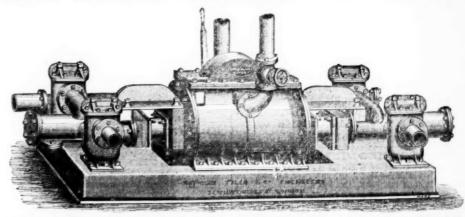
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